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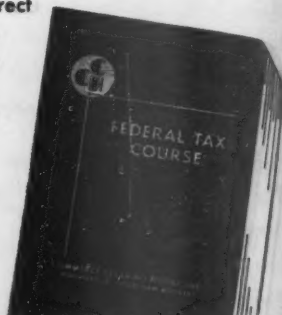
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# The Accounting Review

VOL. XXXIV

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## RESEARCH AND FACULTY DEVELOPMENT\*

FRANK P. SMITH

THE mutual relationships of research and faculty development have been argued long and vigorously in journals and in sessions of academic groups. These debates seldom settle the issue, if there really is one. The role of research as a part of academic life is largely a matter for each individual to decide. His appraisal will naturally be influenced by such factors as his training, experience, and interests. The importance attached to research productivity by the administration of his educational institution is also a factor, but this is secondary to the individual's appraisal.

The importance assigned to research may appear to vary markedly among the various fields and disciplines but this conclusion can be deceptive. It is possible that the apparent differences really represent differing levels of maturity. In general, it is the older and well-established areas of academic interest which emphasize research and the newer ones which accord it little importance.

Business administration has developed as an academic field during this century. There was little attention given to research in the earlier decades. However, as the field acquired stature in the academic hierarchy, as literature developed and research training became an established part of graduate programs, research began to acquire an importance in its own right. It is not too much to expect that as business administration matures, research will be accorded a level of importance now found in the older disciplines.

### MEANING OF "RESEARCH"

There are many types of activities which carry the label of "research." Possibly all are related to faculty development, but for the purposes of this paper the term "research" is used to refer only to the types which are published in technical journals and monographs. The term is further limited to theoretical treatments of subjects in the broad field of business administration such as original developments, syntheses and constructive criticism of existing theories, and related historical and philosophical discussions. The great mass of writing which may be characterized as "nose counting" and "census taking" is arbitrarily excluded. Such writings may serve a limited but useful purpose for certain segments of business or government, but they seldom contribute anything of value to the body of literature with which a teacher of business administration is primarily concerned. Likewise, textbook writing is excluded, not because it does not serve a useful purpose but because new theories or original treatments of

\* The substance of this paper was presented at the Association's 1957 meeting of the Southeastern Section, at the University of Georgia, and the 1958 meeting of the Southwestern Section, in Dallas. The comments are based principally upon the writer's experience as Dean of the Graduate School of the University of Rochester, 1948-1952; as Director of the Bureau of Business Research, School of Business Administration, University of Michigan, 1952-1958; and as Editor of THE ACCOUNTING REVIEW, 1949-1958. He is presently Educational Director of Lybrand, Ross Bros. & Montgomery. Neither his present employer nor either of the two Universities mentioned above are to be considered responsible for the ideas expressed.

theories and principles seldom appear initially in this type of writing. Understandably, most textbooks are written to sell; presumably the royalties compensate the authors for the lack of a research label.

#### MEANING OF "FACULTY DEVELOPMENT"

The term "faculty development" is vague and difficult to define. Observable events take such forms as promotions, committee assignments and speaking engagements, consulting opportunities, advisory appointments, testimony as an expert before legal and governmental bodies, possibly an endowed chair, honorary degrees, and enviable lectureships here and abroad. However, there are other changes which are less obvious but nonetheless important. These relate to the personality and intellectual capabilities of the individual such as enhanced teaching and research skills, a broader and deeper understanding of the environment and problems of business, the ability to work effectively with others in varied situations, greater assurance and poise, broader acquaintance with colleagues and with leaders of business and industry, and possibly even a greater tolerance for the frailties of his fellow man. Perhaps the term "faculty development" can be generalized as the enhancement of the value of a teacher to society.

*Relationship of Research to Faculty Development.* This paper is admittedly biased. Intelligent research as here defined is assumed to have a positive and causal relationship to faculty development. Others may present the negative side of the story; there might conceivably be something to say from this point of view. However, this is not a debate on the merits of the thesis but is an attempt to present only the affirmative arguments.

*Knowledge of Field.* Perhaps the most important single outcome of research is a more penetrating and comprehensive understanding of a particular field of business

administration. The criticism is sometimes made that most research projects are so narrowly specialized that the researcher becomes an authority on a minute area to the exclusion of a knowledge of this general field. Perhaps this is the old argument of the specialist v. the generalist. The fact remains that the specialist has an opportunity to add to our limited store of knowledge of the business world and to originate, refine, correlate, or disprove theories and principles which the generalist does not have. It is difficult to understand how intelligent research of a theoretical nature in business administration can be so narrowly defined as to exclude all but a minute segment of a field. Research problems in business administration cannot be channeled along an undeviating and closely delimited track with the facility which may be found outside the social sciences. There are too many entangled factors which must be considered, if only to dismiss them as irrelevant to the study. Even a very small research project of the type under discussion will almost surely result in both increased knowledge and understanding of the immediate project and greater understanding of the general field surrounding the project.

A distinction should perhaps be made here between research as such and the publication of research findings. A faculty member can be a fine scholar in a field without publication, but not without research. There are undoubtedly many individuals in our colleges and universities who are excellent research workers but who never publish. It is unfortunate that the results of such efforts are not made available to their colleagues.

*Sophistication.* A by-product of research to the individual (again ignoring the question of publication) is what might be called "sophistication" in his field. Effective research develops the individual's ability to use the tools of his specialty and

to sift, correlate, and appraise data with a deftness and understanding which cannot be acquired by merely reading and studying what others have written. The analogy is not perfect, but research provides the teacher with much the same type of experience which the college graduate acquires when he attempts to apply the learning acquired in college to actual business situations. This "experience" should help the individual to develop into a more knowledgeable, ingenious, realistic, practical, and competent practitioner in his field.

*Opportunities.* Still another by-product might be expressed as "to him who hath shall be given." Anyone who has had experience on promotion committees, has participated in a search for new personnel, has assisted business firms seeking consultants, or has served as an advisor to a foundation is aware that the first question is "what has he done?" The question commonly, but not always, refers to publications.

For many faculty members, published research is the magic event which opens the door to greater opportunities for self-development. It is possible that too much weight may be given to publications in certain instances, but it should not be difficult to appreciate that publications are likely to rank high in order of consideration in almost any type of situation. The plain fact is that the individual who publishes has a tangible commodity to offer for appraisal. The individual who has not published may be equally competent, but his ability can only be attested by opinion and his productivity can only be supported by a rationale which justifies the fact that he has not published.

#### SPECIFIC RELATIONSHIP OF RESEARCH TO PROMOTION

The relationship of published research to promotion in academic rank has been touched upon briefly above. There are two

specific points which are relevant to the general thesis of this paper.

*Short-run v. Long-run.* It is natural for a faculty member to hope for promotion; it helps both ego and pocketbook. It is only sensible for a faculty member to do his best to bring himself to the maximum degree of eligibility for promotion. The latter point should be considered from the standpoint of both short-run and long-run possibilities.

From the short-run point of view, the individual is primarily concerned with the college or university with which he is presently associated. Educational institutions differ in attitude toward research. There may be some which actively oppose research; there are certainly many which are indifferent. The stronger institutions generally encourage and expect research and publication. From a short-run standpoint, the individual is obviously well-advised to fit himself for promotion in terms of the criteria of his institution. He may also prefer to adopt this as his long-run goal.

Individual faculty members have many preferences regarding institutions. They may prefer large, small, urban or small town, undergraduate or graduate, in addition to sections of the country and other factors. However, the decision to do or not to do research and to publish is a fairly distinct line of cleavage. The relocation possibilities of the nonresearcher are limited to those schools which are hostile or indifferent to research; the productive researcher is eligible for all. The individual who aspires to appointment in one of the stronger institutions, and particularly if he hopes to have the opportunity to do graduate teaching, should appreciate that published research may not be the most important criterion but it is the most common one.

*Increased Enrollments and Research.* A second point concerns the large increases in enrollments which are anticipated during the next decade and resultant increases

in demands for teachers. These demands are expected by some to be so great that educational institutions will be forced to relax criteria for selecting, retaining, and promoting members of the faculty. The current emphasis on publication is one of the standards which is expected to vanish or at least to play a less important role.

The effect of future increased enrollments upon the importance assigned to research can only be conjectural at this time. It is possible, of course, that the demand for faculty members could become so great that a lowering of standards would be imperative. The demand today for established scholars and for promising young teachers is far greater than it was last year or the year before, and we can expect this situation to become even more critical in the years immediately ahead. However, there are a number of offsetting factors. One is an improvement in faculty salaries. Another is the experimentation in various schools with different methods of teaching more students without increasing the faculty. A third factor is the increase in the number of schools offering graduate programs and more opportunity to finance graduate study through scholarships, grants, fellowships, and part-time work. A fourth factor is the boot-strap operation of recent years whereby more and more institutions are moving into the category of universities with a natural desire to emulate the standards and attainments of the older and established institutions. Finally, there is the factor of maturation.

Business administration is coming of age and is taking its place as an established and respected field along with the older and long-recognized disciplines. A concomitant of this evolution is that the standards adopted for business administration are, more or less of necessity, the equivalent of those of the older disciplines. These include generally an encouragement and emphasis on research greater than that

which has been typical in the past in schools of business administration. The maturation of business administration means, in effect, that it must abide by the highest standards in effect among the various schools and colleges in the university. It is possible, but unlikely, that all the units of the university might lower standards by reducing the importance assigned to research. On the basis of very slight evidence, the writer suggests that there may be more rather than less emphasis upon research and publication in the years ahead.

#### RESEARCH AND QUALITY OF TEACHING

A common criticism of research is that it short-changes the student body by impairing the classroom performance of the teacher. Of course this may happen. Similar results could follow an excessive expenditure of time on text-book writing, consulting, square dancing, golf, deep sea fishing, or checkers. None of these activities should impair classroom performance, if controlled in terms of time and effort. On the other hand, research, and possibly consulting, offer possibilities of equipping an individual to be a more stimulating teacher.

There is much rationalization regarding the importance of effective teaching. There seems to be an idea abroad on some campuses that everything a teacher does should eventually result in better teaching. This is sheer nonsense. A member of the faculty of an educational institution has many responsibilities, of which only one is discharged in the classroom. For example, he has a responsibility to consult with students, to carry his share of committee assignments, and to have dinner with the President on appropriate occasions. None of these add to his teaching effectiveness, except as they play a part in his continued employment, yet few would argue seriously that these activities should therefore be

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terminated. None of these, and likewise research, should be emphasized to the extent that the faculty member no longer has time and energy for effective teaching. The problem is one of allocating time to a number of responsibilities, rather than an arbitrary exclusion of any one because of a presumption that such activity does not increase the effectiveness of the individual as a teacher.

The principal stock in trade of a member of a university faculty is an acquaintance and understanding of the literature of his field and a minimal competence in using existing tools, techniques, and skills. His basic training as an undergraduate and graduate student is in an existing body of knowledge. As a member of a faculty he is obviously expected to keep abreast of new developments in his field. All of this is handed to him on a silver platter as the result of the efforts of others. However, he has a reciprocal obligation, in the opinion of the writer, to make some small addition to that stock of knowledge which has been made available to him. His individual contributions need not be great; few are. Most bodies of knowledge arise from the accretions of small and, by themselves, unimportant contributions which dovetail over the years into imposing disciplines. From this standpoint the argument of research versus teaching is irrelevant. The faculty member has an obligation to make his contribution, however small, to the literature of his field.

#### DO SCHOOLS ENCOURAGE RESEARCH?

Research, like many other activities, should be begun early in one's academic career. What do educational institutions do to encourage young faculty members in developing research interests? There are exceptions to the following but, typically, the young teacher is given a heavy teaching load with a minimum of assistance, a disproportionately large share of counseling

and registration, and most of the dirty jobs around the school such as time-consuming committees of little prestige and less reason for existence. In addition, to make ends meet, he may teach evenings and summers, grade correspondence papers, and tutor students. Blame for this type of situation should probably be assessed to both parties—the individual and the school; the end result can be predicted without much difficulty and with a high degree of accuracy. If university administrators really wish to encourage young appointees to begin a research career, they will stop loading them with duties which could be done far better by nonfaculty personnel. Likewise, administrators might "encourage" young teachers to place more stress on their long-range goals and to look less enviously at the short-range dollar.

#### GETTING STARTED

The first publication seems to be a terrific obstacle to so many. This is one of the reasons for starting in 1955 to publish abstracts of doctoral dissertations<sup>2</sup> in *THE ACCOUNTING REVIEW*. We hoped that this would not only encourage faculty members to continue research and publication, but that the abstracts, in their own right would serve to make known completed but unpublished research. Along the same line, most theses contain material which could be reworked into one or more publishable articles, yet it is rare to find teachers taking advantage of the situation. Book reviews also represent excellent opportunities for the young teacher to get into print. These reviews may entail certain hardships on the ego of book authors but they are typically a hardy lot.

#### SELECTING A TOPIC

Selecting a question or problem for investigation involves a number of considerations. One of the most important is that the individual, ideally, "discovers"

the problem. Many of us have been asked to suggest topics for research by doctoral candidates and by fellow faculty members. This is difficult to do in a way which will arouse any enthusiasm in the other person. You will recall that the Association published a series of "framed" research topics, beginning in 1954, in the hope that graduate students and faculty would seize upon them and supply answers to definite, existing problems suggested by public accounting and industrial firms and by governmental agencies. The program was a complete failure. Research in business administration is largely an individual affair, and the success depends heavily on the enthusiasm of the individual who initially conceives the idea.

**Originality.** A topic or problem should have some element of originality. There is no point in simply duplicating what someone else has done. However, the standard of originality can be set too high. Few, if any, projects are entirely original. There are few, if any, questions in the field of business administration which have not been considered by someone at sometime and the results made available in published form. New hypotheses, methods, assumptions, data, interrelationships, and various other aspects of a project may result in a worthwhile investigation, even though the ground has been cultivated to some extent before. However, a word of warning is in order. Editors of magazines must consider varying types of readers and try to provide something in each issue which will appeal to each type. Accordingly, any given topic, no matter how intrinsically important it may be, cannot be permitted to dominate a publication. The young researcher who seizes on a phase of a topic which has already had a good play in journals is likely to have difficulty in finding a publication opening, no matter how excellent his paper may be.

**Size.** The size or scope of the topic is im-

portant to the researcher in terms of time and other resources and in connection with publication. It is pointless to undertake a project which can only be dealt with effectively in a monograph, if there are no prospects of publishing a monograph. Research, and potential publication, are matters to be considered together and with common sense.

The beginner should, in most cases, select a small topic with the knowledge that he will have a small publication. Editors are not fond of the small topic considered in twenty pages, or the large topic covered in five pages. However, a small topic covered effectively in a few pages is relatively easy to place for publication.

**Library Research.** It is amazing how many beginners will seize upon an idea and complete an entire research project without apparently making any effort to find out if the topic has been investigated by others. It seems only elementary to find out if one really has a novel idea or if others have had similar ideas and have done something about them. It is particularly embarrassing to an editor when a well-meaning colleague produces with, obviously, an expenditure of much time and effort, a paper which sets forth an idea which first saw the light of day a decade or more ago and has found its way into many textbooks. Faculty members are sometimes most indiscriminating when considering the topics *they* have chosen for *their* research.

#### COMPLETENESS

One of the problems which any researcher must face, and one which seems to be particularly difficult for the beginner, is excessive familiarity with his subject. Prolonged immersion in a subject can easily lead one to the conclusion that everyone else is equally knowledgeable. This perhaps explains some of the papers which are submitted to journals, which consist simply

of the writer's conclusions. A research paper submitted for publication should be complete with the reasons for and methods of investigation explained and the findings stated and supported.

**Style and Format.** Style of writing and format of presentation are not of great importance in terms of publication. However, some authors show surprisingly poor judgment. An editor of a journal is not likely to be tremendously impressed with a carbon copy of a paper which, judging by format and style, was obviously prepared for a competing publication. Another embarrassing practice of some of our colleagues is to submit a paper simultaneously to several publications without explaining the duplicate submissions. A paper prepared by any of the mass production methods such as mimeograph or multilith is immediately suspect. The author could help his case if he explained how the paper happened to be in something other than typewritten form and to whom he has submitted copies.

**Grammar and Rhetoric.** Assistance with grammar and rhetoric should be readily available in a university; surely only self-conscious reluctance to ask for help can explain some of the atrocious writing which is submitted for publication. However, another possible answer may be that the author is too anxious to see his masterpiece in print to bother with sober reconsideration.

The researcher should follow the advice which has been given by many and let his writing cool a bit, not too long but at least until his impassioned zeal has ebbed and

he has a few misgivings about his product. He is possibly then approaching a state of mind which will permit him to reread the paper with objectivity. It is amazing the number of constructive changes which can be made at this time.

If a paper has merit an editor will often, perhaps usually, struggle along with the author is an attempt to get the words untangled, spelling and punctuation corrected, and meaning clarified. Lack of writing skill should not deter a teacher from preparing the results of his research for publication.

#### SUMMARY

The thesis of this paper is that research is one of the primary responsibilities of university faculties and is an integral part of developing scholars and teachers. Yet no matter how vigorously all concerned may agree with this, research is often placed low in the order of priority. Still, in final analysis, published research plays a vital part in the lives of many university teachers. Despite the abuses which are sometimes committed in the name of research, and the odds and ends which masquerade under the name, published research is one tangible factor which can be appraised by many and is commonly given important recognition.

Perhaps the most important general consideration is that a faculty member has an obligation to enrich, to the best of his ability the literature of his field. In return, his contribution cannot help but assist in his own development as an individual and as a scholar.

# ACCURACY IN STATISTICAL SAMPLING

H. JUSTIN DAVIDSON\*

*Touche, Niven, Bailey & Smart*

AS THE application of statistical sampling techniques to problems of accounting has grown during the past few years, an increasing number of books and articles have appeared in accounting literature describing the usefulness and reporting the successful application of these techniques. The literature has covered a wide range of topics pertinent to the interdisciplinary nature of statistical sampling as applied to accounting: the practical problems involved in the development, acceptance and application of a statistical sampling plan; statistical methods; accounting implications of statistical sampling; cost advantages of statistical sampling; and many others. However, with few exceptions, current articles tend to give cursory attention to the one concept indispensable to an understanding of the usefulness and application of statistical sampling. This is the concept of statistical accuracy. In a majority of articles the concept of statistical accuracy is either ignored altogether, described erroneously or incompletely, or described with the assumption that the accountant has a thorough grounding in statistics.

The concept of statistical accuracy is important in understanding the usefulness of statistical sampling because accuracy is one of the two basic advantages of statistical sampling techniques. One advantage of statistical sampling is, of course, the fact that an estimate of a desired characteristic is obtained at less cost than by means of a complete count or calculation. The second basic advantage is that the estimate is obtained with a known degree of accuracy. Since the cost advantage can be obtained by any type of sampling plan, it may be argued that the principal and

only advantage of statistical sampling is its characteristic of known accuracy.

Because statistical accuracy is of such fundamental importance, this paper will attempt to explain the concept in terms that the accountant can understand. While this explanation will be primarily directed toward statistical accuracy, it is hoped that the explanation will provide the accountant with additional insight into the entire statistical sampling process.

On an intuitive level, the statistician's and the layman's concepts of accuracy are identical. That is, the accuracy of an estimate is, in some way, a measure of the nearness of the estimate to a "true" value being estimated. However, the statistician has found that there is no one measure which by itself will give a complete description of the accuracy of a sample estimate. The statistician, therefore, uses three concepts to describe statistical accuracy. These are the *bias*, the *precision*, and the *reliability* of a sample estimate; taken together they comprise the statistical concept of accuracy and afford an equivalent to the common concept of accuracy.

Although the statistician uses the three concepts of bias, precision, and reliability to define accuracy, these three concepts correspond to two types of inaccuracy familiar to the average person. These two types of inaccuracy or error can be termed "random error" or error due to chance and "systematic error." An illustration of these two types of error is afforded by the shot pattern of a rifle fired at a target. First,

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though a rifle is aimed precisely each time at the center of a target, the bullets will not all strike in the same place. Due to small chance variations—ranging from the amount of powder in each cartridge to the reflexes of the marksman—the strikes of the bullets will tend to cluster about the center of the target. This type of error is termed random error and is described, in the statistical sense, by the concepts of precision and reliability.

In the above example, a second type of error may be distinguished if the sights of the rifle are inaccurate. With such the case, not only will there be a random error, reflected in a clustering of the bullet strikes, but there will be a systematic error reflected in the clustering of the bullet strikes at a point away from the center of the target. In the statistical sense, this systematic error in bullet strikes due to the inaccuracy of the rifle sights is described by the concept of bias.

Bias, or "systematic error," in a sample estimate arises chiefly in two ways. First, a sample estimate may be biased because of systematic errors in measurement. For example, in measuring the diameter of a sample of ball bearings, the gauge may be miscalibrated with a resulting bias in the estimate of ball bearing diameter. Second, the method of making the sample estimate may be inherently biased. For example, the total population of the United States might be estimated by counting all females and multiplying by two. Regardless of how precise the count of females, the estimate of total population would be biased because the ratio of females to males in the United States is not one to one.

Although bias, or systematic error, must always be considered in determining the total accuracy of a sample estimate, in most practical applications of statistical sampling the inaccuracy of a sample estimate due to bias will be small or negligible in comparison to the inaccuracy due to

random error. This will be especially true if competent statistical guidance is available to aid in selecting a statistical sampling method with minimum bias and to aid in avoiding systematic errors of measurement.

Although the basic concept of bias is simple, a thorough discussion of bias is technically complex and beyond the scope of this article. Therefore, the remainder of this article will discuss the concepts of precision and reliability without further reference to bias. In the discussion that follows, the total accuracy of the sample estimate will be treated as being measured solely by precision and reliability. However, the reader should note that this simplification is made only for convenience of exposition. In any actual sampling situation, the effect of bias on accuracy must be measured and taken into account.

To develop the concepts of precision and reliability, it is convenient to begin at the point where a statistically determined sample has been drawn from a population for which it is desired to make an estimate of a population characteristic. The steps and principles involved in making the desired estimate and in determining the precision and reliability of the estimate can then be viewed more clearly. In practice, of course, the principles involved have been taken into consideration by the statistician prior to drawing the sample.

The following situation will be considered:

It is desired to estimate the total dollar value of an inventory of 1,000 items by means of a statistical sampling plan. An unrestricted random sample of 40 items has been drawn from the population of 1,000 items and the dollar values for individual items recorded as follows:

\$79.74	\$25.31	\$41.35	\$33.80
25.06	71.36	00.45	95.90
36.54	93.54	95.22	70.18
21.84	30.68	29.04	91.06
75.50	00.36	39.57	97.67
64.08	85.72	22.47	10.87
09.93	67.89	96.25	81.54
13.54	76.35	56.85	26.58
28.68	72.66	29.31	03.41
95.39	41.08	87.90	47.32

The true dollar value of the 1,000 inventory items is \$50,000. This true value is, of course, not known to the person making the statistical sampling estimate.

Starting from such a situation, the following points will be covered: (1) how the statistician makes an estimate of the true total dollar value of inventory, (2) how the statistician is able to make statements concerning the accuracy of his estimate and his definition of accuracy of an estimate, and (3) how well the statistician has done in this particular estimate and the manner in which he can improve future estimates.

#### MATHEMATICAL NOTATION

At this point it is convenient to introduce statistical notation for the quantities and concepts being discussed. The use of simple mathematical notation in articles for the accountant, while contrary to general practice, is becoming increasingly necessary if effective communication between the statistician and accountant is to be maintained—indeed, if statistical methods are to be successfully applied within the accounting area. It has been generally recognized that the successful combination of statistics and accounting is handicapped by the statistician without a substantive knowledge of accounting practice and its complexities. Unfortunately, the converse of this statement—which is also valid—has not been emphasized. While the accountant need not be a first-rate statistician, he should speak a little of the language. Mathematical notation is an indispensable part of statistical language and, for this reason, is used in this article.

The symbols that are commonly used by practitioners of statistical sampling and that are used in subsequent pages are explained in the following section.

#### COMMON STATISTICAL SYMBOLS

$N$  = The total number of items in the population being sampled (in this case the total number of inventory items, 1,000).

$n$  = The total number of items in the sample (in this case, 40).

$Y_j$  = The value of the characteristic being measured for the  $j$ th item in the total population (in this case the dollar value of the  $j$ th item in the total inventory).

$y_j$  = The value of the characteristic being measured for the  $j$ th item in the sample (in this case the dollar value of the  $j$ th item in the sample).

$Y$  = The sum of all  $Y_j$ , where  $j$  runs from 1 to  $N$  (in this case, the true total dollar value of the 1,000 inventory items).

$y$  = The sum of all  $y_j$ , where  $j$  runs from 1 to  $n$  (in this case the total dollar value of the 40 inventory items in the sample).

$\bar{Y}$  = The average value of all  $Y_j$  (in this case the average dollar value of the 1,000 inventory items in the population).

$\bar{y}$  = The average value of all  $y_j$  (in this case the average dollar value of the 40 inventory items in the sample).

$\hat{Y}$  = The estimate of  $Y$  derived from the sample.

From the above symbols, the accountant may note some standard rules of statistical notation which are generally followed:

1. Capital letters refer to *population values*, i.e.,  $N$ .
2. Small letters refer to *sample values*, i.e.,  $n$ .
3. Letters with subscript refer to *individual items* or *values of individual items*, i.e.,  $Y_j$ .
4. Letters without subscript refer to *totals of individual items* or *totals of values of individual items*, i.e.,  $Y$ .
5. The symbol  $\sim$ , used in connection with another symbol denotes an *estimated quantity*, i.e.,  $\hat{Y}$ .
6. The symbol  $-$ , used in connection with another symbol denotes an *average quantity*, i.e.,  $\bar{Y}$ .

The accountant's basic education in

statistical notation is satisfactory for most purposes if one additional symbol,  $\Sigma$ —the Greek letter, sigma—is introduced. This symbol simply means “the sum of” or “the total of” the quantities following it. For example,  $\Sigma y_j$  means the sum of all quantities,  $y_j$ . If any possible confusion exists about what is being summed, it is customary to add subscripts and superscripts to the symbol  $\Sigma$ . For example,

$$\sum_{j=1}^{j=n} y_j$$

means the sum of all quantities,  $y_j$ , for

$j=1, 2, 3 \dots n$ ; that is,

$$y_1 + y_2 + y_3 + \dots + y_n.$$

The notation which has been introduced can be clarified by reference to the sampling situation being investigated. If  $y_j$  is the sample value for the  $j$ th item drawn, then the characteristics of the *sample* drawn by the statistician may be described as follows:

$j$	$y_j$	$j$	$y_j$
1	\$79.74	21	\$25.31
2	25.06	22	71.36
3	36.54	23	93.54
4	21.84	24	30.68
5	75.50	25	.36
6	64.08	26	85.72
7	9.93	27	67.89
8	13.54	28	76.35
9	28.68	29	72.66
10	95.39	30	41.08
11	41.35	31	33.80
12	00.45	32	95.90
13	95.22	33	70.18
14	29.04	34	91.06
15	39.57	35	97.67
16	22.47	36	10.87
17	96.25	37	81.54
18	56.85	38	26.58
19	29.31	39	03.41
20	87.90	40	47.32

Since there are 40 items in the sample,  $j$ , which runs from 1 to  $n$ , runs from 1 to 40 in this case,  $n$  equals 40.

With the use of the symbol,  $\Sigma$ , the accountant may also note some simple relationships which exist between the symbols

introduced. For example:

$$y = \sum_{j=1}^{j=n} y_j$$

By previous definition of

$$\sum_{j=1}^{j=n} y_j:$$

$$y = y_1 + y_2 + y_3 + \dots + y_n.$$

In terms of the present example, this means that:

$$y = y_1 + y_2 + y_3 + \dots + y_{40}$$

$$y = \$79.74 + 25.06 + 36.54 + \dots + 47.32$$

$$y = \$2,071.99$$

The symbolic relationship simply says that the total dollar value of the sample,  $y$  equals the sum of,

$$\sum_{j=1}^{j=n} y_j$$

the dollar values of the  $n$  individual sample items,  $y_j$ .

Another symbolic relationship that may be noted is as follows:

$$\bar{y} = \frac{y}{n} = \frac{\sum_{j=1}^{j=n} y_j}{n}$$

This says that the average dollar value of sample items,  $\bar{y}$ , equals the total dollar value of the sample,  $y$ , divided by the number of items in the sample,  $n$ . In terms of the present example:

$$\bar{y} = \frac{\$2,071.99}{40}$$

$$\bar{y} = \$51.79975$$

Similar relationships apply, by analogy, to characteristics of the *population* being sampled by the statistician. For instance:

$$Y = \sum_{j=1}^{j=N} Y_j$$

and:

$$\bar{Y} = \frac{Y}{N} = \frac{\sum_{j=1}^{j=N} Y_j}{N}$$

In the present example, the population being sampled has been assumed to have the following characteristics:

$$N = 1,000$$

$$Y = \$50,000$$

$$\bar{Y} = \frac{Y}{N} = \frac{50,000}{1,000} = \$50.00$$

However, it should again be pointed out that the statistician making the sample estimate does not know  $Y$  or  $\bar{Y}$ .  $Y$  is the quantity which the statistician must estimate.

#### THE ESTIMATE

Necessary statistical notation having been established, the problem of estimating the true total value of the 1,000 inventory items can be considered. A reasonable approach to making this estimate might be as follows. From the 40 sample values of inventory items, the average value of inventory items in the sample can be calculated as \$51.79975. If the sample is representative of the total population of 1,000 inventory items, the expected average value of the 1,000 inventory items is also \$51.79975. Since there are 1,000 inventory items in the total population, an estimate of the true total value of the 1,000 inventory items is \$51,799.75.

In statistical notation, the approach described above can be summarized by one equation.

$$\hat{Y} = N \frac{\sum_{j=1}^{j=n} y_j}{n}$$

That is,  $\hat{Y}$ , the estimate of  $Y$ , equals the

total number of inventory items,  $N$ , times the average dollar value per inventory item estimated from the sample:

$$\frac{\sum_{j=1}^{j=n} y_j}{n}$$

The equation for the estimate,  $\hat{Y}$ , has been derived above as a reasonable means of estimating  $Y$ , the true total value of the 1,000 inventory items. This estimate,  $\hat{Y}$ , is not only reasonable, it is the best type of estimator of  $Y$  for this particular problem and an entire class of problems which it represents.

An estimate of the true total value of the 1,000 inventory items having been made, its accuracy is of concern to both the statistician and the user of the estimate. Knowing that the true total value of inventory is \$50,000, we are in a position to calculate precisely the percentage of error for the estimate of \$51,799.75. However, the statistician making the estimate does not know the true total value of the inventory. How can he make statements about the accuracy of the estimate?

A working understanding of statistical statements about accuracy can be gained by considering a repeated sampling and estimation process from the particular population of this problem. Therefore, the results of drawing many random samples of 40 items from the population of 1,000 inventory items and calculating from each sample the estimated true total value of the population will be considered.

Suppose 1,000 random samples of 40 were drawn from the population of the present problem and an estimate of the true total value of the population computed for each. For this particular population with a known true total value of \$50,000, the results of calculating 1,000 estimates of the true total value would be expected to fol-

low the general pattern given in Table I.<sup>1</sup>

TABLE I

Estimate, $\hat{Y}$ , of True Total Inventory Value, $Y$	Number of Times in 1,000 Estimates that the Estimate, $\hat{Y}$ , Would Be Made
-34,000	1
34,000-36,000	2
36,000-38,000	5
38,000-40,000	14
40,000-42,000	30
42,000-44,000	59
44,000-46,000	98
46,000-48,000	132
48,000-50,000	159
50,000-52,000	159
52,000-54,000	132
54,000-56,000	98
56,000-58,000	59
58,000-60,000	30
60,000-62,000	14
62,000-64,000	5
64,000-66,000	2
66,000+	1

In Table I it should be noted that the repeated estimates,  $\hat{Y}$ , from samples of 40 items tend to cluster about the true total value of inventory, \$50,000. For example, the sample estimates,  $\hat{Y}$ , fall within the interval from \$46,000 to \$54,000, 582 times out of 1,000. This tendency of *sample estimates* to cluster around the true value of the characteristic being estimated holds true regardless of what the true value of the characteristic being estimated is. Thus, if in the present example the true total value of inventory had been \$100,000, a clustering pattern of sample estimates about \$100,000 would occur. The clustering of sample estimates about the true value of the characteristic being estimated is of fundamental importance to the concept of statistical accuracy.

The statistician makes use of the clustering property of sample estimates to define accuracy in the following fashion. For an individual sample estimate,  $\hat{Y}$ , the statistician designates a specific interval about the estimate,  $\hat{Y}$ . For instance, he might designate the interval from  $\hat{Y} - \$10,000$  to  $\hat{Y} + \$10,000$ —or from \$41,799.75 to

\$61,799.75 in the case of the estimate of this example. Such an interval about the estimate,  $\hat{Y}$ , is commonly called, in statistical language, a "confidence interval" or a measure of the precision of the estimate,  $\hat{Y}$ . Now if the estimate,  $\hat{Y}$ , is a "good" estimate of the true value,  $Y$ , then the true value,  $Y$ , may well be within the confidence interval set. A pertinent question is how often will the statistician be correct in saying that the true value,  $Y$ , falls within the confidence interval?

To illustrate the answer to this question, suppose again that the statistician makes 1,000 estimates of the true total inventory value of \$50,000 from random samples of 40. Suppose that for each estimate, the statistician designates a confidence interval of plus or minus \$10,000 around the sample estimate. Thus for estimates that the statistician makes which are between \$40,000 and \$60,000, the true value of \$50,000 will lie within the confidence interval; for estimates that are outside of this range, the true value of \$50,000 will fall outside the confidence limits. However, from the values given in Table I for the present example, 956 out of 1,000 estimates made by the statistician will fall between \$40,000 and \$60,000. These chances, in a repeated series of estimates, of the true value of \$50,000 lying within the confidence interval of plus or minus \$10,000 about the sample estimates are called the *reliability* of the estimate,  $\hat{Y}$ . As can be noted from this example, the statistician

<sup>1</sup> This general pattern is known in statistical language as the "normal density function." The assumption that the 1,000 estimates would follow this pattern rests upon a basic statistical theorem known as the Central Limit Theorem. This theorem states that the pattern of repeated sample estimates from *any* population approaches the normal density function if sample size is sufficiently large. In the present example, it is assumed that the sample size of 40 is sufficiently large that the pattern of sample estimates follow the normal density function. In any event, it is possible to perform a rough statistical test to determine whether or not this is true. For example, see *Sampling Techniques*, W. G. Cochran, John Wiley & Sons, Inc., New York, New York, 1953, pp. 22-27.

must specify both the *precision* and *reliability* of the estimate when referring to its accuracy.

In the present case, it was seen that for a confidence interval (precision) of plus or minus \$10,000 around the sample estimate the true value will be within the confidence interval set for 95.6% of all estimates (reliability). For this example, it is worthwhile to investigate the change in reliability as precision changes. Results of such changes for the present example are presented below.

Precision	Reliability
±\$ 2,000	31.8%
±\$ 4,000	58.2%
±\$ 6,000	77.8%
±\$ 8,000	89.6%
±\$10,000	95.6%
±\$12,000	98.4%

It will be noticed that reliability decreases as the confidence interval (precision) decreases. Viewing a smaller confidence interval as increased precision, reliability decreases as precision increases. This general relationship holds not only for this particular example, but for any statistical sampling plan where sample size is fixed. The effect of varying sample size on precision and reliability is discussed shortly.

So far, it has been demonstrated that the statistician can use the "cluster" property of sample estimates to make statements about the reliability and precision of an estimate. However, in order to use the cluster property, the statistician must have some knowledge of the cluster pattern for a given type of sample and some means of measuring the pattern. Fortunately for the user of statistical sampling, the cluster property of most statistical sampling plans follows a definite pattern which can be calculated by the statistician. For the sampling plan of this example and also for many other sampling plans, the clustering of sample estimates approximately follows a pattern known as the normal distribution. The mathematically minded account-

ant can secure a picture of the normal distribution by plotting or graphing the values given in Table I. However, use of the normal distribution is so frequent in practical statistics that its properties deserve additional explanation.

The fundamental property of the normal curve that is of importance may be described with reference to sample estimates as follows. Given any clustering of sample estimates that follow a normal distribution, a measure of the "clustering" (or a measure of the dispersion as it is called in statistical language) may be calculated for the sample estimates. This measure of dispersion is called the standard deviation of the sample estimates by the statistician; it is usually denoted by the small Greek letter sigma with a subscript added to identify this particular standard deviation as pertaining to the distribution of sample estimates of the total, i.e.,  $\sigma_T$ . When the standard deviation of the estimates,  $\sigma_T$ , is used as a unit of measurement, the number of sample estimates falling within any distance (measured in multiples of  $\sigma_T$ ) from the true mean is precisely known.

To illustrate this property of the normal distribution, suppose that a normally distributed group of sample estimates (different from those of our example) has a standard deviation,  $\sigma_T$ , equal to \$5.00. Whatever the true value that is being estimated, it is known that 68.3% of the sample estimates will fall within an interval about the true value plus or minus one standard deviation,  $\sigma_T$ , i.e., plus or minus \$5.00; it is known that 95.4% of the sample estimates will fall within the interval of plus or minus two  $\sigma_T$ , i.e., plus or minus \$10.00; and similarly for any multiple of the standard deviation,  $\sigma_T$ . This property of the normal distribution means that, regardless of what is the true value being estimated, the frequency of sample estimates falling within any interval about the true value is known. The statistician

can then proceed to make statements about the precision and reliability of an estimate in the manner that has been demonstrated.

Since the standard deviation of the sample estimates,  $\sigma_{\bar{Y}}$ , the measure of the dispersion (or clustering) of the sample estimates, is of such importance, its characteristics may be investigated further. It would be expected that the dispersion (or clustering) of sample estimates should be related to the dispersion (or clustering) of individual population values. In terms of the present example, one would expect the dispersion of the sample estimates of total inventory,  $\bar{Y}$ , to be related to the dispersion of individual inventory item values,  $Y_i$ . This is, in fact, true. Using the symbols,  $\sigma_{\bar{Y}}$  for the standard deviation or measure of dispersion of the  $\bar{Y}$ , and  $\sigma_{Y_i}$  for the standard deviation or measure of dispersion of the  $Y_i$ , their relationship may be written:

$$\sigma_{\bar{Y}} = \sqrt{\frac{N-n}{N}} \frac{N\sigma_{Y_i}}{\sqrt{n}}$$

This relationship is important for two reasons. First, it enables the estimation of  $\sigma_{\bar{Y}}$ . As has been stated,  $\sigma_{\bar{Y}}$  is a measure of dispersion of the sample estimates; however, it is not practical to draw a large number of samples and calculate the estimate,  $\bar{Y}$ , for each in order to calculate  $\sigma_{\bar{Y}}$ . However,  $\sigma_{Y_i}$  can be estimated (with any desired precision and reliability) from the original sample. Thus, an estimate of  $\sigma_{\bar{Y}}$  can be calculated by means of the relationship above. Since it is customary to denote estimates of  $\sigma$  by the letter,  $S$ , the above equation can also be written:

$$S_{\bar{Y}} = \frac{(N-n)}{(N)} \frac{(N^2)}{(n)} S_{Y_i}^2$$

For the mathematically minded, the equation for  $S_{\bar{Y}}$ , the estimated standard

deviation, or measure of dispersion, of the  $Y_i$  is as follows:

$$S_{Y_i}^2 = \frac{\sum_{j=1}^{i=n} (y_j - \bar{y})^2}{n-1}$$

In addition to enabling the *practical* estimation of  $\sigma_{\bar{Y}}$ , the relationship:

$$\sigma_{\bar{Y}} = \sqrt{\frac{N-n}{N}} \frac{N\sigma_{Y_i}}{\sqrt{n}}$$

is important because it enables the statistician to design a sample to yield any level of precision and reliability desired for the sample estimate. As some readers may note, this equation says that the standard deviation,  $\sigma_{\bar{Y}}$ , of the sample estimates,  $\bar{Y}$ , decreases as sample size,  $n$ , increases. As  $\sigma_{\bar{Y}}$  decreases, a constant percentage of sample estimates, e.g. 68.3% for a plus-and-minus one-sigma distance, fall within a shorter interval about the true value being estimated. In simplest terms, if it is desired that the sample estimates,  $\bar{Y}$ , cluster closer about the true value being estimated,  $Y$ , then the size of the sample should be increased. A closer cluster of sample estimates yields increased precision and/or reliability and increasing sample size thus increases these quantities. How much the sample size should be increased to attain a desired level of precision and reliability is discussed in the next section.

#### POST-SAMPLE EVALUATION

The procedures for making an estimate and specifying its accuracy having been explained, it is desirable to make a post-sample evaluation of the statistical sampling plan used. The results of the example statistical sampling plan are given below:

1. The true value,  $Y$ , being estimated was \$50,000.00

2. The estimate,  $\hat{Y}$  of the true value was, \$51,799.75
3. The precision of the estimate was  $\pm \$10,000$  with a reliability of 95.6% (or  $\pm \$8,000$  with a reliability of 89.6%, etc.)

Although the estimate,  $\hat{Y}$ , is in this case a very good estimate of the true value,  $Y$ , the precision of the estimate is relatively bad. If it were not known that the true value is \$50,000, but only that the statisticians would be right 95.6% of the time in saying that the true value lay between \$40,712.50 and \$60,762.50, then sample results might be viewed as unsatisfactory.

If the sample results are viewed as unsatisfactory, the question arises as to how an increased level of precision and/or reliability can be attained in future samples. It has been shown that increasing the sample size improves precision and reliability, but how much should the sample size be increased? The statistician is able to answer this question by specifying exactly the relationship between sample size, precision, reliability and the basic variability of the individual items in the population which is being considered. For the present example, this relationship is expressed by the equation:

$$n = \frac{\frac{N^2 t^2 S_y^2}{P^2}}{1 + \frac{N t^2 S_y^2}{P^2}}$$

In the equation above,  $n$  and  $N$  are sample size and population size respectively.  $S_y$  is the estimated standard deviation,  $\sigma_{Y_j}$ —commonly called the standard error—of the individual items in the population and is a measure of their variability.  $P$  is the desired level of precision in terms of the plus or minus interval about the true value.  $t$  is a quantity corresponding to the reliability desired. Values of  $t$  for various levels of reliability are as follows:

Reliability Desired	$t$
99%	2.58
95%	1.96
90%	1.64

Use of the equation above can be demonstrated by calculating the sample size necessary for a precision of  $\pm \$5,000$  and a reliability of 95% for sample estimates from the population of 1,000 inventory items. In this situation, the symbols in the equation have the following values.

$$P = \$5,000$$

$$t = 1.96$$

$$N = 1,000$$

$$S_{Y_j} = \$31.724$$

One word should be said about how  $S_{Y_j}$  was obtained. In the present case, a value of  $S_{Y_j}$  was calculated from the first sample of 40 inventory items and used in determining the precision and reliability of the sample-of-40 estimate. If the sample of 40 items had not been drawn and  $S_{Y_j}$  not determined, it would be necessary to draw a small sample to do so. This latter procedure is normally followed in practical sampling work. A small sample is first drawn to estimate  $S_{Y_j}$ .  $S_{Y_j}$  is then used to design a larger sample which will approximate the desired precision and reliability for the estimate required.

To determine the sample size,  $n$ , for a precision of  $\pm \$5,000$  and a reliability of 95%, the values given above are substituted in the equation for sample size.

$$n = \frac{\frac{(1,000)^2 (1.96)^2 (31.724)^2}{(5,000)^2}}{1 + \frac{(1,000)^2 (1.96)^2 (31.724)^2}{(5,000)^2}}$$

Solving for  $n$ , the required sample size is found to be 134. For purposes of comparison, we may also compute the precision of the sample size of 134 at a 90.0% level of reliability by using this same formula. If these calculations are carried out, the

precision of a sample of 134 at a reliability of 90.0% is  $\pm \$4,182$ . These results may be compared with the results of the first example:

Sample Size	Precision	Reliability
40	$\pm \$10,000$	95.6%
40	$\pm \$8,000$	89.6%
134	$\pm \$5,000$	95.0%
134	$\pm \$4,182$	90.0%

For approximately the same level of reliability, doubling the precision (halving the confidence interval) requires more than doubling the sample size. As a rule of thumb, twice the precision for a given level of reliability usually requires approximately four times the sample size.

#### SUMMARY

The foregoing has been a brief description, using a hypothetical example, of the process followed by the statistician in making an estimate from a statistical sample, in specifying the accuracy of the estimates in terms of reliability and precision, and in designing the sample. As a brief description, the discussion has been restricted to

the case of simple unrestricted random sampling and is necessarily simplified. The full complexities of statistical theory have been avoided and the many practical problems which are faced in instituting a statistical sampling plan have not been discussed.

Despite omissions, it is hoped that the accountant has gained some insight into statistical sampling procedures and the language of the statistician. Particularly, it is hoped that the accountant has gained understanding of the concepts of precision and reliability which the statistician uses in defining accuracy. Known accuracy—known precision and reliability—is one of the major advantages of statistical sampling. When the accountant uses statistical sampling, he can benefit from this advantage of determinable accuracy by specifying the levels of precision and reliability he desires for the estimate being made. However, if these basic concepts of statistical sampling are not understood, the advantages of statistical sampling may not be realized.

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# DEPRECIATION AND CAPITAL REPLACEMENT IN AN INFLATIONARY ECONOMY\*

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**M**Y SUBJECT as it appears in the printed program is *Depreciation and Capital Replacement In An Inflationary Economy*. I should like to restate this subject in somewhat greater detail as follows:

1. The function of depreciation in the "recovery" of capital invested in depreciable property—its gradual re-conversion to expendable funds.

2. The difficult problem—in an inflationary economy—of measuring and expressing the amounts of capital recovered.

3. The relationship of depreciation to capital replacement.

Before proceeding to the discussion of these specific issues, let us review some of the basic principles of depreciation accounting, for they affect both the timing and the total amount of "recoveries."

## *The Objective of Depreciation*

It is now quite generally recognized that depreciation is not a method of evaluation of property, nor a device for providing funds for replacement of depreciated property; rather, it is a method of allocating the cost of property to operating periods, then to divisions and departments, and finally to products and services. This does not mean, however, that depreciation has no relationship to the "recovery" of capital invested in depreciable property, nor to the provision of funds for the replacement of this property. In a very real sense, and under certain conditions, depreciation does tend to "recover" capital and provide funds for replacement. These relationships will be developed more fully later. But here I wish to emphasize that the *objective* of depreciation is the alloca-

tion of cost, and that these other relationships, while important, are incidental to the main objective.

## *Depreciation Base and Method*

There are two important aspects of the cost allocations—the "recovery" of capital invested—arising from depreciation. They are:

(1) The *timing* of the recoveries—their distribution among accounting periods; and

(2) The *total amount* of the recoveries.

The *timing* of the recoveries is determined by the depreciation *method* employed (straight-line, declining-amount, or other). The *total amount* of the recoveries is a function of the choice of *base* (original dollar cost, original cost re-expressed in terms of current dollars, or replacement cost). It should be noted that the choice of method and the choice of base are independent decisions, and that neither is related to the estimate of useful life.

## *The Choice of Method*

The most logical and reasonable basis for allocating property cost would seem to be in relation to benefit received—the net value of the service rendered by the property in the various operating periods. It would appear that in most situations the net value of services rendered in successive periods will tend to decline, for several reasons.

(1) When property is purchased, particularly in substantial amounts, it is with the expectation that the volume of produc-

\* This paper was presented at the Southern Regional Conference of The Controllers Institute of America in New Orleans, March 6-7, 1959.

tion and the earnings for the reasonably immediate future will justify the purchase. It is not ordinarily expected that the property will be uniformly useful over its entire estimated life.

(2) The physical efficiency of property ordinarily declines over its useful life, reducing gradually the quantity and/or quality of its service. This may involve loss of precision, more time out for repairs, and other factors.

(3) There is a gradual encroachment of obsolescence. This gradually reduces the value of even the same quantity and quality of service rendered by the property in successive periods. For example, just as soon as an improved machine is available, the net value of the services rendered by the existing machine is reduced.

(4) Repairs and maintenance tend to increase each period, thus gradually reducing the net value of the service rendered in successive periods.

#### *The Declining-Amount (Accelerated) Method of Depreciation*

The foregoing seem to constitute cogent arguments for the application of some declining-amount method of depreciation to book accounting. It is highly improbable, however, that in any large number of cases either of the declining-amount methods available for taxes will be appropriate. The fixed-percentage-of-diminishing-balance method will probably not yield even approximately accurate allocations of facility costs, particularly at the "accepted" (tax) rate of 200 per cent of straight-line. The sum-of-the-years'-digits method is particularly inflexible in that both the starting rate and the "slope-of-the-line"—the amount of change each year—are predetermined. But there still remains an almost unlimited choice of specific declining-amount methods—of first-year and last-year rates, of frequencies of rate change, and of the "slope-of-the-line." For ex-

ample, under the multiple-straight-line method the "slope-of-the-line" may be much less "steep" for buildings than for machinery and equipment, and less "steep" for some types of machinery and equipment than for others, all depending on the analysis and evaluation of the factors of depreciation discussed earlier.

It is evident, then, that in any given situation, the selection of the most appropriate declining-amount method, and its application, present extremely difficult problems, substantially more difficult than those involved in the application of the straight-line method. But if facility cost ought to be allocated to successive time periods, and to production, in proportion to the net value of the service received in successive periods, and if there is substantial evidence that the net value of the services received does decline substantially over time, it follows that a continuation of the straight-line method of depreciation results in substantial errors in cost allocation. I will hazard the opinion that in most cases these errors are greater than any that are likely to result from the selection and application of any declining-amount method that seems reasonably appropriate to the given situation.

#### *The Straight-Line Method of Depreciation*

The use of straight-line depreciation is justified only when the following assumptions are tenable:\*

- (1) The asset will be uniformly useful throughout its useful life;
- (2) There will be no decline in physical efficiency;
- (3) There will be no encroachment of obsolescence, i.e., there will be no technological progress in this area;

\* Strictly speaking, if consideration be given to interest on investment, these assumptions would justify a slightly increasing rate of depreciation; straight-line depreciation provides for some continuous decline in the net value of services rendered when consideration is given to the interest factor.

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- (4) The periodic cost of repairs and maintenance will not increase;
- (5) There will be no change in product or production method which will render the asset less appropriate—less adequate—for the service which it renders, than the date on which it was acquired; precisely the same machine would be bought today.

Insofar as these assumptions are not valid—and they rarely are—then some form of declining-amount depreciation is more appropriate than straight-line for allocating costs in relation to the net value of services rendered, and in the determination of reported net income, particularly from the standpoint of providing a sound basis for an estimate of future earning power. Furthermore, unless the change toward declining-amount is at least twice as much as it should be—unless the “slope-of-the-line” is at least twice as “steep” as warranted by the facts of the given case—the resulting depreciation charges are still more “accurate” than under straight-line depreciation.

#### *Depreciation and “Recovery” of Capital Consumed*

Now, let us get back to the particular aspects of depreciation that we are supposed to be discussing today—the recovery of capital invested in depreciable property, and the replacement of that property, in an inflationary economy.

But, you say, if depreciation is merely a method of allocating the cost of capital consumed to successive accounting periods (and to divisions and departments and finally to products and services) how does this “recover” the cost of the capital invested in depreciable property? Well, it doesn’t necessarily. But if the selling price of the product or service is at least sufficient to cover all costs, including a proper charge for depreciation—the costs of the

capital consumed—the actual sale of the product (or the rendering of the service) does recover all costs allocated to the product, including the costs of the capital consumed.

#### *Depreciation and Replacements*

It follows, then, that the cost of capital consumed which is “recovered” by the (non-cash) charge for depreciation, plus net income in excess of dividends paid (increase in retained earnings), is available for all kinds of increases in net assets including the replacement of depreciated property. And please note this. Herein lies the *only* relationship between depreciation and replacement of depreciated assets. Insofar as these available funds are *not* required—nor used—for increases in net working capital, reduction in long term debt, etc., they are available for replacements of—or additions to—depreciable property. While there is no *causal* relationship *from* replacement requirements *to* depreciation policy (as I will try to demonstrate later), it is true, as just indicated, that “funds” resulting from the “recovery” of capital consumed, through the charge for depreciation, may be available for replacement of depreciated assets.

#### *Equivalent Replacement*

Note particularly that any effect of depreciation on funds for replacement is immediate—in the current year; these funds are available currently for the purchase of depreciable property, and quite commonly are expended for this purpose. This is, in a very real sense, the current (immediate) “equivalent” replacement (in dollars) of the asset cost that is being charged to current operations as depreciation—the “equivalent” replacement of the assets being currently depreciated. Rarely, if ever, is there a special “fund” built up over time to finance the replacement of a specific asset or group of assets at retirement. Thus there can be no possible relationship between the

total of the depreciation charged off during the life of a specific asset and the cost of replacing that asset at its retirement.

#### *Effect of Changes in Depreciation Policy on Available Funds*

Now that we have established that the amount of the current depreciation charge plus the increase in net earnings (or less the decrease in net earnings) is available for increases in net assets, including replacements, does it follow that a change in depreciation policy (for book purposes) will be reflected automatically in a corresponding change in the amount of funds available for these purposes? Certainly not. There will be no change whatsoever in the amount of these available funds *unless* the change in depreciation policy is reflected in a management decision that affects an income item, an expense item (other than depreciation expense) or the amount of dividends paid. But of course depreciation policy does influence management decisions. This is one of the primary reasons for a sound depreciation policy.

For example, if a careful review of depreciation policy should result in *justified* increases in some or all of the depreciation charges (on the books), the resulting increase in costs and decrease in net income might well lead management to one or more of the following actions, among others:

- (1) An increase in the price of one or more of its products;
- (2) Increased pressure for cost reductions—or for increases in sales volume;
- (3) More determined resistance to demands for wage increases;
- (4) A reduction in dividend payments.

Only insofar as these management actions are effective in offsetting the additional depreciation charges and maintaining reported net income at its former level (or re-

sult in lower dividend payments) will the increased depreciation charges serve to "recover" more funds which are then available for increases in net assets, including replacements. In the absence of such effective actions by management, the only effect of increased depreciation charges will be a corresponding reduction in net income—and hence no effect on available "funds."

#### *Preliminary Conclusions*

At this point let us summarize our conclusions; we have established:

1. That depreciation is a method of allocating to successive periods—and to products—the "cost" of capital consumed;
2. That an appropriate method of allocation is in ratio to the benefit received—the net value of the services rendered in successive periods, and that most situations demand a degree of declining-amount depreciation.
3. That an appropriate depreciation charge tends to "recover" the cost of the capital consumed and to make funds available for increases in net assets, including the current "equivalent" replacement of the capital consumed.

#### *Depreciation Base*

This brings us to what is perhaps the most critical issue of the whole depreciation policy. It is simply this. What is the most appropriate base for measuring—and expressing—the capital cost that is being "recovered" by depreciation? There would seem to be three alternative bases. They are:

- (1) The number of dollars in the capital investment; the original dollar cost.
- (2) The amount of general purchasing power—"economic power," the command over goods and services in

general—in the capital investment; the original dollar cost re-expressed in a number of current dollars equivalent to the economic power invested.

- (3) The "replacement cost" of the specific item or type of capital being depreciated.

#### *Replacement Cost*

Let us dispose first of the third alternative—replacement cost. What is replacement cost anyway? It seems to "mean all things to all men." It has been variously described as:

- (1) What an identical asset *would* cost currently;
- (2) What an identical asset *will* probably cost at the time of replacement;
- (3) What the "equivalent" of the asset *would* cost currently, "equivalent" being none too clearly defined;
- (4) What it *has already* cost to replace the asset;
- (5) Original cost adjusted by specific price indexes—many narrowly specialized indexes, or a few, or just one index specific to all of the expenditures of a company, or even of an industry.

All of these varieties of replacement cost are based on the concept that net income is the excess of revenue over some measure of the "current cost" of replacing the *physical* capital (assets and services) consumed in producing that revenue—that net income is the portion of the revenue not required to maintain intact some *physical quantity* measure of the capital invested in depreciable property.

Quite aside from the lack of agreement as to what replacement cost is, and the difficulty—perhaps impossibility—of measuring it, its use as a base for the depreciation charge would represent a departure from recorded original cost and thereby

would destroy to a considerable degree the objectivity of accounting. The cost of "consuming" existing capital should be determined irrespective of the intention to replace in kind, to replace with a different type of capital, or not to replace at all. This conclusion appears to rule out, in the determination of income for periodic reporting to stockholders and other non-management groups, the use of either specific replacement costs or a price index specific to the particular kinds of assets "consumed" by a given corporation.

#### *Management's Use of Replacement Costs*

It should be recognized, however, that specific replacement costs have great significance for those engaged in the active management of business. To a very large degree management should ignore, in its decisions, facts about original cost, except as those costs are indicative of present or probable future costs. Management involves planning for the future, including the replacement of actual physical capital when it has been consumed. It follows that the plans for revenue—and other sources of capital—must take into consideration the present cost, and even the probable future cost, of the capital being consumed.

That such costs are not objective is not necessarily a bar to their usefulness to management. That they are frequently only broad estimates, and subject to varying degrees of inaccuracy, may be unfortunate, but unavoidable. Still, with allowances for their limitations, management must—and does—make its decisions on the basis of specific replacement costs rather than past costs.

#### *Alternative Original Cost Bases*

The elimination of replacement cost as an appropriate base for depreciation—for the measurement of capital recovery—at least for financial reporting) limits our choice to only the first two alternative

bases (1) original dollar cost, and (2) original dollar cost re-expressed in current dollars of equivalent "economic power." But why are these alternative bases not the same? Isn't the dollar the only measure of cost, the only standard for expressing "economic power?" Why do we get substantially different dollar amounts from the use of these alternative bases, both of them describing the same thing, the original cost of the capital invested? The explanation lies in the fact that we are talking about two different dollars—the dollar at the time of the investment of capital and the dollar at the time of the recovery of that capital through depreciation. The dollar is not stable, after all. It is not a constant, uniform measure of economic power. It does fluctuate in value, materially.

#### *Inflation—The Decline in the Value of the Dollar*

Since 1933 the value of the dollar has been declining almost continuously, with minor interruptions in 1938, 1949, and the middle fifties. Its value now is less than 40% of the value in 1932, and about 50% of its value in 1940, as measured by an index of general prices—a weighted average of prices of a wide range of goods and services. With inflationary forces still at work—uncontrolled money supply, large government debt, deficit spending to avoid "recession," union demands for wage increases in excess of the gain in productivity, support of farm prices, the cold war, etc., together with accounting methods that fail to reflect adequately the impact of inflation on profits—a recovery of any substantial portion of this loss of value is highly improbable; indeed a continuing decline in value is the far more likely prospect.

#### *The Measure of Recovered "Capital"*

Keeping in mind these facts about dollars

and dollar values, let us look again at the two alternative bases for depreciation, for the measurement and expression of the amount of capital recovered through depreciation. When this capital was invested it was expressed in a given number of dollars which at the time had a certain amount of economic power as measured by all other possible uses of this number of dollars. In the determination of income in a subsequent period, is it sufficient to charge against operations the original dollar cost of this capital, to recover through depreciation only the *number* of dollars invested irrespective of their current economic power? If operations produce more current dollars than the original dollar cost can we say, therefore, that we have a net income? Or must we first recover the economic power invested, expressed in a larger number of smaller dollars which have a total economic power—an over-all purchasing power—equal to that of the capital invested? Is it sound accounting practice to report that capital investment has been maintained intact, and a profit earned, when in fact only the number of dollars of investment is unimpaired, while the economic power of those dollars has been constantly shrinking? Can a profit exist, in any real sense, without the full recovery of the economic power initially invested in the capital that has been consumed in earning that profit? I contend that sound accounting and adequate reporting will be impossible so long as we ignore—and conceal by subterfuge—one of the important economic facts of life, viz. that the dollar is no longer a uniform, stable, constant measure of economic power, that it has declined substantially in value, that capital investments measured initially by the economic power of dollars at the time of investment can be properly measured at the time of recovery through depreciation only by re-expressing the economic power invested in terms of a larger

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### Methods of Disclosure

In the present stage of accounting development it may be that on the primary financial statements as certified, depreciation should be based on original dollar costs. The effect on cost and income of the conversion of original dollar costs to current dollars of equivalent economic power may best be presented in appropriate supplementary statements. Eventually, however, in my opinion, depreciation on the income statement should be stated in current dollars, with appropriate adjustment to the capital section of the balance sheet.

Perhaps the best statement about the usefulness of such supplementary statements is that which appears below:

"While corporate reports are typically prepared primarily for stockholders, the information therein presented becomes, in effect, public property, and may enter quite generally into the formation of judgments. Financial statement data expressed in uniform 'current' dollars would seem to be useful for the following purposes:

(1) The appraisal of managerial effectiveness in terms of the preservation of the current dollar equivalent of the capital invested in the business and not merely its initial dollar amount;

(2) The analysis of earning power in terms of the current economic backdrop;

(3) The determination and justification of sound wage policies; negotiations with labor unions;

(4) The determination by government of long-range policies with respect to 'control' of the economy through monetary policy, price regulation, limitation of profits, taxation, etc.;

(5) The creation of an informed public opinion with respect to profits, prices, wages, etc., and the effect of inflation (or deflation) upon financial relationships generally;

(6) The determination of managerial policies with respect to pricing, credit, dividends, expansion, and the like."\*\*

\* In theory the conversion of original dollar depreciation costs to current dollars of equivalent economic power requires the following procedure:

- (1) The classification of the original dollar cost of all

items of depreciable property in existence at the beginning of the accounting period by year of acquisition, and sub-classification by depreciation rate.

- (2) The application of the proper depreciation rate to the original dollar cost of the property in each sub-classification.

- (3) The sub-totalling of the resulting amounts of depreciation on each year's property acquisition. (A grand total of these amounts taken at this point as a check should be equal to the current period's depreciation charge based on original dollar cost.)

- (4) The application of the proper general price index to the total depreciation of each year's property acquisitions. (i.e., multiplying the depreciation on original dollar cost by the general price index of the current period and dividing by the index of the year of acquisition.)

- (5) The totaling of the "adjusted" depreciation amounts for each year's property acquisitions, to secure the total "adjusted" depreciation charge on all property for the current period.

In many cases the procedure outlined above may not be feasible. Where property records are such that it is impossible or impracticable, a shorter procedure may be employed. It involves the following steps:

- (1) The classification of the original dollar cost of all items of depreciable property existing at the beginning of the current period by year of acquisition.

- (2) The application of the proper general price index to the total of each year's acquisitions, to get the "adjusted" cost, as of the beginning of the current period, of each year's acquisitions.

- (3) The totaling of these amounts to get the total "adjusted" cost of all existing property as of the beginning of the current period.

- (4) The division of this "adjusted" cost of property by its original dollar cost to get a weighted index of "adjusted" cost to original dollar cost of total property.

- (5) The application of this index to the current year's depreciation on original dollar cost—to get depreciation on "adjusted" original cost.

NOTE: The second method (above) is subject to the possibility of material errors, particularly if price changes have been largely in a single direction, and if relatively large amounts of acquisitions have occurred in single years, particularly either in recent years or relatively remote years. For example, at the present time, after a long period of almost continuous price increases (decline in the value of the dollar) it is quite likely that the application of the second method will yield too large an amount of "adjusted cost" depreciation.

Both of these procedures are based on the assumption that depreciation is computed on the balance in the property account at the beginning of the period. Otherwise modified procedures would be necessary.

In situations where existing property records are incomplete, a greater or lesser degree of estimating may be necessary to secure reasonably accurate approximation of depreciation based on "adjusted" original cost. Any reasonable estimate is more useful for many purposes than depreciation computed on original cost.

\*\* *Price Level Changes and Financial Statements*, Supplementary Statement No. 2, Committee on Concepts and Standards Underlying Corporate Financial Statements, American Accounting Association.

### *Artificial Speed-Up of Original Dollar Cost Recovery*

There appears to be quite a general recognition of the inadequacies of depreciation allowances based on original dollar cost,\* even though "accepted accounting principles"—and the S.E.C.—do not sanction any departure from this outmoded base. As a result stratagems of various kinds are frequently employed to achieve "by the back door" some of the benefits of "current dollar" depreciation. Common devices include: underestimates of useful life; charges to current operations of items which should be capitalized; more rapid declining-amount depreciation than is justified. All of these devices do achieve some of the benefits of current dollar depreciation; capital is recovered before it loses so much economic power through continued inflation, and there is a saving in interest cost. For financial reporting, however, any artificial speed-up of original cost recovery leading to currently larger depreciation charges is not an acceptable substitute for the re-expression of original cost in current dollars. It is not good policy to offset one error against another. Then, too, the offset tends to be temporary, for total recovery is limited to the dollar investment.

### *Conclusions and Recommendations*

- (1) Depreciation is a process of allocating the cost of property to successive operating periods—and to products and services—preferably in relation to benefit received, the net value of services rendered by the facilities in successive periods.
- (2) Depreciation tends to "recover" the cost of capital consumed and thereby to provide funds for increases in net assets, including the current "equivalent" replacement of the capital consumed.

- (3) For book accounting the choice of depreciation base (original dollar cost, original cost re-expressed in current dollars, or replacement cost) and the choice of method (straight-line, declining-amount or other) are independent decisions; and neither is related to estimated useful life.
- (4) Since it is quite generally true that the net value of services rendered by capital tends to decline over useful life, a declining-amount method of depreciation is more likely to be appropriate than is straight-line.
- (5) Since the value of the dollar has declined substantially, the "recovery," through depreciation of the original dollar cost of capital invested, generally falls far short of full recovery of the economic power initially invested. Hence original dollar cost is not an appropriate depreciation base.
- (6) Depreciation based on current or anticipated cost of replacement is not satisfactory for financial reporting. The cost of "consuming" existing capital should be independent of the intention to replace in kind, to replace with a different type of capital, or not to replace at all.
- (7) Depreciation based on original cost re-expressed in terms of current dollars of equivalent economic power as measured by a general price index produces a net income amount that should be a sounder basis for estimating future earning

\* Of 331 corporate executives and educators responding to a recent questionnaire from AICPA, 74% of all respondents (69% of corporate executives and 94% of educators) approved in principle the proposition that the current dollar cost of depreciation should be reflected in some appropriate manner in corporate reports to stockholders. For a complete analysis of the replies to this questionnaire, see "Opinion Survey on Price-Level Adjustment of Depreciation" in *The Journal of Accountancy* April, 1958, page 36.

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power than either of the other two alternative bases.

- (8) For financial reporting, an artificial speed-up of original cost recovery is not an acceptable substitute for the re-expression of original cost in current dollars.
- (9) Changes in depreciation policy—either base or method—can effect corresponding changes in replacement funds *only* through management decisions that affect income items, expense items (other than depreciation expense) or dividends paid.

*Final Note: Depreciation for Income Tax Purposes*

Depreciation for income tax purposes is not governed by accounting principles but by the provisions of the tax law. Tax depreciation should no longer be considered a method of cost allocation but an instrument of social policy. The indiscriminate

provisions for investment allowances and accelerated depreciation (including declining-amount) have no necessary relationship to the expiration of useful life—to the net value of services rendered in successive periods. It is legitimate—and usually in the interest of the tax-payer—to take the largest deductions available under the law, to recover the capital invested as early as possible. Full advantage should be taken of all artificial speed-ups available without respect to proper allocation of cost, including investment allowances, too rapid acceleration, current deduction (where permissible) of expenditures capitalized on the books, or even excessive rates. So long as depreciation deductions must be based on original dollar cost it is almost certain that all of the foregoing speed-up devices taken together will fall far short of recovery of the current dollar equivalent of the cost of capital consumed and that confiscation of capital by taxation will continue.

# A CASE FOR NATIONAL INCOME ACCOUNTING IN THE ACCOUNTING CURRICULUM<sup>1</sup>

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THE purpose of this paper is to advocate the acceptance of national income accounting as a topic for study in the more advanced undergraduate accounting classes. The reasons offered will be that the topic adds to the educational value of the whole subject of accounting and provides another link between accounting and economics. The plan of the paper will be to examine the role of instruction in national income accounting, first, in relation to the educational objectives of schools of business; second, in relation to its usefulness for business administration; and third, in relation to a professional career in accountancy.

## *Educational Objectives of Schools of Business*

Even a few weeks devoted to national income accounting in an undergraduate accounting course should expand the accounting horizons for students and their instructor. The subject provides a helpful perspective for contemplating an economic society in operation. In this role, its place in the curriculum appears consistent with the following view of business education:

Men are men before they are businessmen; and even if it did not contribute directly to improved business management, university education would be of infinite value. For what the university seeks (or should seek) to provide is a stimulating environment in which the potentiality for growth of those who come to it can be most fully realized.<sup>2</sup>

Certain it is that there is a sweep and a scope to national income accounting which assures an intellectual content and a challenge to the imaginative student.

One of the things which even a brief study of national income concepts and methods does is to throw into relief a kind

of bias which underlies most accounting instruction: its preoccupation with the philosophy of the firm. Of course there is nothing wrong with concentrating on the problems of the single firm, but if that is the way things are, it is just as well to be aware of them. Some work in national income accounting provides a standard of comparison and helps the accounting student (and his teacher) to appreciate the special emphasis of a large part of his studies.

And national income accounting makes us think more about the nature of private property, and the role of money and banking in the economy. It brings home the idea that some things which are assets for a person or for an individual business are not necessarily assets for a whole community. For example, when we step back to view the whole country, the only stocks and bonds which survive as assets from the nation's point of view are those issued by foreign companies and governments, and then only because our accounts are just for our own country, and not for the world. A nation's "investment," which we measure in the gross savings and investment account, turns out to be changes over the year only in what the economist calls "real assets"—increases or decreases in inventories, in fixed assets, and in net foreign investment.

In the same way, the kind of game we play in preparing the work sheet for a flow of funds analysis helps us to see how the

<sup>1</sup> This paper is based on a talk given in a round table discussion on national income accounting at the Annual Meeting of the Association at Syracuse University, August 27, 1958.

<sup>2</sup> V. W. Bladen, "The University and Business," *The University of Toronto Quarterly*, July, 1957.

banking system fits into the economic activity of a whole country. The classification of the effects of transactions as non-financial and financial shows the kinds of changes in other sectors of the economy which are related to the changes in loans receivable and deposit liabilities shown in the banking sector.

Again, the preparation of a balance of payments statement makes us think about the variety of ways in which net foreign investment may change, and about the kinds of things which constitute international economic transactions.

It would be rash to advocate any course in accounting which was useless—although that might be a stimulating, if unpopular, proposition. Speakers on accounting subjects often say that accounting is nothing if it is not useful, and we infer that they want accounting courses which teach useful accounting. But what I would urge is that sometimes we jump too quickly to conclusions about what is useful instruction. Some studies may be ultimately useful—in the sense that they influence our attitudes and our thinking years hence—which may not recommend themselves necessarily on grounds of immediate or direct application. What is useful is that which we use; and we will be *using* what we have learned if years later we find it affecting our outlook on the world about us. One need only recall the university courses which he took himself to realize how, over the years, his views have changed about what the best courses were. One writer has said, "To ask whether a given subject is useful or not is like asking whether friendship is useful, and the answer is that it can be, though its usefulness is better not stressed."<sup>3</sup>

The immediate usefulness to employers of at least some of the courses in the curriculum cannot be overlooked, but some space must be reserved for experiment with ideas, and for an analysis of what goes on

within the whole of society, of which business is only a part. The excitement or the stimulus of new insights, like a good tenor, is where you find it. There is no formula for its discovery and one must be grateful for it wherever it appears. Teachers are professional people. They should have ideas of their own about what is worth learning, and they should have the independence to insist on some recognition of their ideas. They should not succumb entirely to a teaching of what outsiders tell them is worth learning, or worse still, to an obsequious teaching of what they think outsiders think is worth teaching. Surely there is an honorable place reserved in business education for learning more about the world without thought for the material blessings or future promotions which may be forthcoming from such knowledge.

The fact that the philosophers recognize that a thing may be intrinsically "good" for its own sake and not merely good for the benefits it will bring, is a point we should not lose sight of in accounting education, no less than in other fields of education. Often, looked at in perspective, the distinction becomes blurred anyway. We have all been able to observe how a primary concern for what one regards as worthwhile for its own sake, and without regard to worldly consequences, may sometimes bring material reward as its unexpected result. In the Second Book of Chronicles, the story is told how God offered to give to Solomon whatever he asked, and how Solomon asked for wisdom and knowledge. Solomon's reply proved eminently satisfactory for he received not only what he asked for but also riches and wealth and honor. It is perhaps unfortunate from our point of view that it was apparently necessary to supplement wisdom and knowledge with material possessions to make the reward complete, but a recollection of the

<sup>3</sup> Cecil Cragg: "And Truly Teach," *The Queen's Quarterly*, Summer, 1958.

story at least directs us to the merit of putting first things first.

Needless to say, I do not think of a course which includes national income as being "specialized" accounting; to my mind it is generalized, not specialized. It deals not with one aspect of accounting but with accounting for a whole community, or sector of the community. For its appreciation, it requires an interest in the economic welfare of the nation and a curiosity about how closely we can measure the effects of economic activities taking place there.

As for the technical details of practical accounting, we can master many of them most efficiently in the actual environment which demands the answer—a learning process which, incidentally, also saves memorizing a good deal of technical information we may never need. The old accountancy apprenticeship system admittedly smacked of serfdom and was not congenial to the North American disposition, but perhaps we have reacted too far in the opposite direction. It was a business man who observed that we cannot learn to swim without getting wet sooner or later. And it was the Head of a Department of Philosophy who said,

"Too few people realize that universities do not attempt to teach experience, but concentrate on preliminary training of the mind, which makes experience so much more valuable when it comes."<sup>4</sup>

Of course the really major objection to an increase in the purely technical courses in accounting—to accounting "in depth"—is that there is only so much room in any university curriculum, and they tend to crowd out other courses which the student, in the whole of his lifetime, may never again have an opportunity to study. We substitute what can always be learned later for what may never be thought about constructively unless some preliminary guidance is given in the university. The special genius of the university should be its capacity to develop a range and a

breadth of interests.

If we are to place accounting somewhere in the social sciences, we have to show in what respects it constitutes a study of human conduct. One way is to note that accounting is the study of the measurement of income, and that income is one of the more important motivators of human conduct.

A second way is to consider the definition of economics. The economist Alfred Marshall once said to his class, "All simple statements about economics are untrue." Whereupon one student at the back of the room raised his hand and asked him if *that* statement were one of them. One hesitates, therefore, to define economics, but we may hazard the definition that it is an analysis and explanation of the material means by which men live. Since the story of our material existence is now largely a story of transactions effected in terms of money, accounting would seem to have some claim as a branch of economics, and in turn of the social sciences.

We are not inclined often to look upon accounting as a study of human conduct. It is not so difficult to conceive of a household budget, which is a kind of accounting, as a study of the economic conduct of a family. But nowadays human conduct has to be studied in relation to various institutions of which the individual is only a part. The phenomenon of the "organization man," whose every reflex is supposed to be conditioned to the demands of some large institution, beclouds the study of human conduct, as such. Much of human conduct is expressed through institutions, whose decisions must always be human ones, and much of accounting is the record of the economic activities and condition of institutions, including of course, corporations. As G. K. Chesterton observed some time ago, "Human nature is hunted, and

<sup>4</sup> A. R. C. Duncan, at the Tenth Annual Conference of the Canadian Tax Foundation, November, 1956.

has fled into sanctuary." It is only when we move through the full arc from the economic conduct of the individual to the economic conduct of the whole nation that the pattern of human conduct once more emerges.

#### *Application in Business Administration*

Unfortunately, ours is not an age which seems sympathetically disposed towards learning as an intrinsic good. It behooves us to turn to an examination of the other arguments for national income accounting in the curriculum. It will greatly strengthen our case if we can show that the concepts and published data of the national accounts are of practical application in business. Occasionally nowadays a company president will refer in his remarks to shareholders to the change in gross national product when explaining the change in operating results compared with those of the preceding period. Gross national product is becoming accepted as a yardstick against which an individual business may appraise its own performance.

The national accounts have a useful role to play in the formulation of economic policy by governments, but it is a mistake to suppose that this is their only application. They have a direct part to play in business accounting. The experience of the Dominion Bureau of Statistics in Ottawa has been described by one of its senior officers in this way:

The number of requests received by the Bureau regarding materials on the National Accounts from corporations, financial houses, trade associations, labour groups and others testifies to the growing use that is being made of the National Accounts in the business world problems. The usefulness of the data for many specific purposes such as the study of markets, the relative importance of particular industries or groups of commodities in the economy as a whole, regional variations in income, and so on, is generally recognized. With a set of accounts to guide him the executive is able to visualize more clearly the complex processes which take place in the

economy and their interrelationships.<sup>5</sup>

Even if we reject the value of a curiosity about the economic affairs of a whole country, and insist upon a single-minded devotion to the affairs of one firm, we must concede that the firm by itself cannot provide all the relevant data for an understanding of itself. To understand our one firm as fully as possible, we need to know not only how it has fared relative to its customers, but we need to set it against a background of other firms operating in the business community. Success or failure is only relative. The financial picture is not finished until we have touched it up with some external data, such as the national accounts may provide.

#### *A Background for a Professional Career in Accountancy*

No one will claim that national income accounting should be included in the prescribed courses of study in preparation for contemporary professional accountancy examinations. Preparation for a professional career is, however, a larger concept than preparation for professional accountancy examinations. The student members of a school of business include a number who intend eventually to make accountancy their career, and it is at this level in their education that the topic deserves attention.

Let us concede at once that the relevance of our subject to the practice of professional accountancy is neither immediate nor direct. Perhaps in the future the day may come when the national accounts are so much a topic of current interest, and so much depended upon for decisions, that vested interests will arise which will lobby for a manipulation of the data they contain. Then it will be that the U. S. Department of Commerce becomes the client

<sup>5</sup> S. A. Goldberg, "The National Accounts—Whither Now?," a paper given at the meetings of the Canadian Political Science Association, June, 1958.

of one of the large firms of public accountants, and the auditors will examine the national accounts and report to the nation whether, in their opinion, the published statements fairly present the current financial condition and results of economic activities for the year under review. As yet, practising public accounts can only dream of such an audit.

No, the relevance of the national accounts for the accounting profession is rather different. I cannot do better than use, to support my own point, the words of Dr. MacKenzie, President of the University of British Columbia:

... for just as technology itself has become more complex, so equally society has become more complex, and professional bodies can no longer achieve their professional ends without having a better understanding of the society within which they operate and of which they are a part. An increasing number of professional leaders have in recent years been saying that a good deal of what is now included in the curriculum as the study of techniques can better be learned on the job if the basic capacity to think and to handle the tools for thought can be communicated in the universities.<sup>6</sup>

National income accounting is, I believe, one such "tool for thought." Anyone who

has worked through the illustrations and problems in this subject will agree that *national income accounting makes you think*. It takes the techniques with which we are familiar and applies them in an unfamiliar context. This is good intellectual exercise in anybody's language. And it demonstrates how accounting can be made to work as a matter of practical application to a particular problem.

#### SUMMARY

The subject of this paper is closely related to one's philosophy of education. Those who favor a curriculum which provides for breadth of outlook will differ in the means by which their objective may best be achieved, but some attention to national income accounting is merited. To provide its students with as wide a knowledge and understanding of the world they live in as is possible by the time they finish their formal education is an aim worthy of a school of business—in common with the university of which it forms a part.

<sup>6</sup> N. A. M. MacKenzie, "The Work of the Universities" in *Canadian Education Today*, Joseph Katz, editor. (McGraw-Hill, 1956.)

## FOOTNOTES

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**T**HIRTY years ago footnotes in annual reports to stockholders were rare; today, published statements seldom are without them. Not only are footnotes frequent and numerous, but also they may be very important in the interpretation of the statements. My own procedure in reading financial statements is to read the footnotes right after I read the auditor's opinion but before looking at the formal statements.

Footnotes must be read, not because all footnotes are important, but because one may be vital. Some seem to me to contradict what is said on the face of the statements. Others replace that which is ordinarily on the statements. Others add important, supplementary material. A few merely repeat in text form what already has been said very well on the statements.

The purpose of this article is to present the results of my analysis of the notes in the statements of one hundred sixty different companies and to offer some suggestions for improving our presentation of financial statement information. All of the companies analyzed are engaged in manufacturing or merchandising activities. Most are listed in the AICPA's annual *Accounting Trends and Techniques*. A few of the companies are quite small; most are large; some are the giants of American enterprise. The sample represents a fair cross-section of publicly held companies in the fields covered.

### *Notes that Contradict*

Many of the footnotes to financial statements seem to contradict what is said on the face of the statements. Generally accepted accounting principles require disclosure of the facts, yet today's common

conventions do not get all the facts onto the statements. Also, there are difficulties in semantics such as are found in both "retained earnings" and "earned surplus." These problems are illustrated in the paragraphs below. First are some surplus-semantics illustrations. The rest of the examples arise because of the inadequacy of current accounting conventions. These latter divide themselves into two classes. Some of the companies cited departed from the normal conventions to give more meaningful statements yet had to say in a footnote that the statement amounts were not what most accountants would assume them to be. Other companies followed the usual conventions but stated that these conventions did not produce statements telling the whole truth; the rest of the truth had to be given in the footnote.

International Harvester Company, for example, states "the balance in this account reflects the reductions caused by transfers made to Common Stock account as stock dividends or otherwise." The account balance thus does not reflect more than part of the earnings retained. Perhaps International Harvester should be congratulated for having pointed out the contradiction. I am certain that other companies among my one hundred sixty have similarly capitalized retained earnings; none mentioned it. Perhaps this only argues that "Retained Earnings," now so commonly used in place of "Earned Surplus," is a poor choice of words.

"Earned Surplus" carries with it an implication, at least to many readers, that it is free for any use. If "Earned Surplus" and "Retained Earnings" are freely substitutable terms, then the many notes pointing out restrictions are contradictory.

Air Reduction Company, for one, points out in a note that only thirty million of its sixty-six million dollars of retained earnings is available for dividends. Caterpillar Tractor takes the negative approach and states how much, sixty per cent in this case, is not available. Chain Belt Company avoided a contradictory note on a separate page by including the restriction right on the balance sheet thus:

Retained earnings invested in the business (under terms of indenture, approximately \$3,900,000 at October 31, 1957, is not available for payment of cash dividends), statement attached... \$23,581,240

Three of the other surplus restrictions were caused by directors' decision (Bristol Myers for excessive replacement cost), by court decree (Sun Oil Co.), and by preferred stock contract (W. T. Grant Co.).

Two companies contradict, in a way, their inventory amounts. Gimbel Brothers speaks of tax litigation pertaining to its life inventories and says that necessary adjustments have not been made. Ohio Oil Company reports that its inventories of crude oil are carried at market. This is a contradiction to the usual meaning of inventory we infer when we see it on the balance sheet. A similar statement might be made about Du Pont's showing of its investment in General Motors.

Foremost Dairies (1957) in effect says that the income tax expense for the year is about \$2 million (roughly 20%) lower than it would otherwise have been because of some losses realized in the prior year by the subsidiary. When the subsidiary was acquired, reserves were set up for the potential loss. Had the company had foresight (equal to the excellence of hindsight), it would have set up a reserve for the potential loss, net of tax effect.

Many companies operating in foreign countries do not include income earned abroad because of the uncertainty of getting those earnings home. However, many people consider that these amounts are

earned. To such individuals, a footnote stating that equity in such net earnings exceeded dividends received (by \$53 million in the case of the Texas Company) contradicts the final figure on the income statement. There are complications in the Texas case because it shares ownership fifty-fifty with Standard Oil of California in some of its overseas operations. Nevertheless such omission has been decried in the financial publications. *Forbes*, in its April issue, discussed "Business Aboard—Under the Mattress" and cited some of our corporate giants that do not disclose the amounts of such earnings even by footnotes.

Long-term lease payments and stock option provisions are required to be disclosed. Both have been discussed in the statements of the Institute's Committee on Accounting Procedure. Eleven years ago I expressed my opinion (*THE ACCOUNTING REVIEW*, July 1948) that the present value of future lease payments should be shown as a liability on the balance sheet with a corresponding asset. The profession was, of course, not ready to adopt such a procedure then or is it now. However, now we generally recognize, as we did not then, that such lease contracts must be disclosed. In fact, several recent bond indentures which restrict subsequent debt require that long-term lease rentals be capitalized in determining status with respect to the debt limit. The stock option problem is now generally recognized and disclosure is required. However, we do not require that disclosure be made on the face of the statements. Indeed, we do not yet know how to show it there if it should be shown. A similar statement could be made about past-service costs of pension plans. Perhaps commitments and guarantees also belong under the caption of contradiction.

Many readers will disagree with my contention that the footnotes referred to here contradict the balance sheet or income statement. I am almost certain, however,

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that they will agree that these facts should be disclosed to conform to current notions of full disclosure. To me the fact that they must be disclosed indicates that these footnotes say the statements do not tell the whole story. Those who disagree with me will almost certainly feel that these notes fall into the "Notes that Add" category which will be discussed later.

#### *Notes that Replace*

In order to make financial statements simple or clear to look at, there has been a tendency to take the details out and to put them somewhere else. To show property, plant, and equipment as a single figure on the balance sheet and to show the details elsewhere is a common practice in corporate annual reports. Other topics frequently handled this way are inventories, long-term debt, and capital stock. Current assets and current liabilities were also handled this way in one case (Union Oil) that came to my attention.

Details that have been removed from the basic statements are handled in a variety of ways. Sometimes they are included in footnotes which are "an integral part of the statements." Sometimes they are revealed in supplementary schedules. Where footnotes are used, the form may be either a schedule or text. Fixed asset details are typically in schedule form (Shell Oil, Allied Chemical & Dye); other topics may be covered in either form. Receivables, for example, are presented in text form by Radio Corporation of America; American Home Products uses the schedule form for inventories and a text form for intangibles. The distinction seems to be solely a matter of individual expression.

When companies use schedules, as distinct from footnotes, there is a question whether the schedules are covered by the auditor's certification. Bethlehem Steel has schedules, not footnotes, disclosing details of inventories; property, plant, and

equipment; long term debt; and capital stock. These, in the case of Bethlehem, are specifically covered by the audit certificate. Armco Steel likewise has a number of schedules covering almost the same topics; however, the audit certificate does not specifically cover them. Had the schedules been in the form of footnotes, the audit certificate would certainly have covered them, for typically the footnotes are an "integral part of the financial statements."

This positioning of statement details raises four questions:

- a. How far should we go?
- b. Should the mechanical form be that of a footnote or a separate schedule?
- c. Is text or schedule form better?
- d. Should the details be covered by the audit certificate?

The first three of these questions may resolve into matters of personal opinion. For example, I believe Shell Oil's and Allied Chemical & Dye's removal of property details to a subordinate place was very much in order, but I feel Union Oil went too far in removing the current asset details. My general preference is that the device of a footnote be confined to those items best covered by text explanation and that schedules be used wherever feasible and that material not be forced into footnote form. The audit certificate certainly should cover all items and can be made to do so very readily. There is no reason to have only part of the financial data certified if the audit work has been done.

#### *Notes that Add*

By far the majority of notes examined add to the information on the statements rather than contradicting, replacing, or repeating it. The illustrations which follow are classified by the statement item to which they add. However, these notes might have been classified by the kind of data they add. Some tell which of several generally accepted accounting principles

were applied; e.g., *lifo* or *fifo*. Some give information which is needed to evaluate the statements properly. Some give details which are useful and informative but not required by today's standards of full disclosure. In a few cases the notes add information which, although true, may give rise to misleading implications.

With respect to accounts receivable, it is customary to show the accounts net on the balance sheet and to tell in a note the amount of the reserve deducted. Reports issued by Eastman Kodak and Quaker Oats are illustrative of this practice. Other companies give the amount of the reserve parenthetically right on the face of the balance sheet. Skelly and Shell Oil reports include examples of this. Many companies do not give any information on the subject although, I am sure, they neither ignore credit losses nor feel none will arise. Standard Oil (Indiana) and Sinclair Oil are examples of companies giving no information on this subject.

Among the footnotes relating to inventories were a great many giving the basis for pricing: *LIFO*, *FIFO*, or what have you. Many told the per cent of the inventory on *LIFO* (Eastman Kodak, Continental Can). Phillips Petroleum states that crude oil inventories are priced at *LIFO* on an annual basis whereas other inventories are *LIFO* on a monthly basis. Champion Paper and Fibre gives current replacement cost of its *LIFO* inventories. Bond Stores states that it uses the retail method. Those using normal stock go to some length to explain its operation; Corn Products, Endicott Johnson, and National Lead are examples. General Mills explains its hedging operations in a note to its financial statements. All of these give useful information to the user of the financial statements. There is considerable question if the bare statement of *LIFO* or retail method is really very helpful as compared to the explanation of base stock, hedged

position, or current replacement cost.

Under the heading of property, plant, and equipment, in addition to the schedule of types of property discussed before, is usually a statement that the cost basis is used. Only on rare occasions does a reference indicate that some of the older property is carried on the basis of an appraisal; Corn Products Refining refers to such an appraisal made in 1922. Bond Stores tells which subsidiary owns which property. The fact is important in this case because of the nature of the parent company's liability on the mortgages as explained in the footnote (which also is keyed to the bond section of the balance sheet).

Depreciation is often discussed in the property footnote; sometimes it is discussed in a note devoted exclusively to depreciation. Many companies merely tell the amount of depreciation and amortization and do not otherwise disclose it on the statements. Ex-Cell-O separates depreciation on plant and equipment, amortization of emergency facilities, and depreciation on leased machines. Du Pont, after giving the full amount of depreciation on the statements, tells how much of it was at the 20% rate for emergency facilities. Eastman Kodak, instead of telling how much the 20% was, tells how much the 20% amortization exceeds normal depreciation. Endicott Johnson gives the amount by which double-declining balance depreciation exceeds that formerly taken. First National Stores points out the excess of depreciation over that allowed for tax purposes. In many cases there is reference to the excess of tax depreciation over book depreciation and a statement explaining treatment of the deferred taxes. A few companies, Revere Copper and Brass for example, include a succinct statement that current charges do not reflect replacement cost.

Other topics covered by footnotes that add to the information on the statement are legion. A few of the topics and a com-

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Deferred charges and intangible asset details	Paramount Pictures
Federal tax closing status	Douglas Aircraft
Notes payable and bank loans	Higgins, Inc.
Reserves for contingencies, etc.	U. S. Steel
Funded debt (dates, interest rates, restrictions, pledged assets, sinking fund requirements)	Foremost Dairies
Deferred income	Gulf Oil
Preferred stock (conversion, sinking fund, call price)	Du Pont
Capital stock changes	Dow Chemical
Common stock voting rights	Ford Motor
Common stock reserved	Scott Paper
Sales (breakdown)	Sinclair Oil
Security write downs	Newmont Mining
Stock options, bonus plans, and incentive compensations	Gillette
Pensions	Corning Glass

All of this information is useful to the reader. Except for the amount of depreciation, much of it could hardly have been put on the face of the statement. Two questions arise. Is this information necessary in order that the statements fairly present or could it have been given in a financial review not incorporated into the statements? If it must be in the statements to give disclosure, then what details must be presented there? Note the difference in disclosure of 20% amortization among those companies that are silent, Du Pont which tells the amount of such amortization, Eastman Kodak which gives the amount by which it exceeds normal, and those companies which do not use it at all for book purposes.

General Electric and General Motors state that all the inventory has been verified by physical count. I do not see what this adds to the statements. Certainly omission of mention of this fact by others does not imply lack of physical count. I would expect the auditors to disclose any such lack. The fact that 100% of the inventories was counted instead of a sample probably was intended to give the statements more credence. Someone might interpret the necessity of a 100% count as an indication of inadequacy of controls. The reputations of these companies do not

warrant such an inference; however, it might well be made in case of less well-known companies.

### Notes that Repeat

The fourth kind of footnote found is that which repeats with little if any elaboration information also appearing on the face of the statements. Since such a footnote serves no purpose and since it may confuse the reader into hunting for a false significance, I am glad to say very few such notes were found among the one hundred sixty reports examined. One of the giants of American industry has a footnote in its 1957 report stating that at the end of 1956 a certain sum of "U. S. Government securities has been set aside" for additions and replacements of facilities and that a stated part of the sum had been used during 1957. On the balance sheet, outside the current asset section, is the following item: "United States Government securities set aside for property additions and replacements." The figures are identical to those in the note. It would seem to me that anyone sufficiently versed in financial statements to be reading them carefully enough to see the notes would be able to understand the clear-cut balance sheet presentation.

Also in the category of repetitive notes are those that tell the amount of the reserve for bad debts when the amount is shown parenthetically on the balance sheet. The same disclosure is sometimes given to the inventory basis, depreciation reserves, debt rates and maturities, and preferred stock par and redemption price.

### Alternatives to Footnotes

There are several alternatives to footnotes: (a) showing the data on the face of the statements, (b) presenting a supplementary schedule properly keyed to the statements and covered by the audit certificate, (c) using the "financial review,"

and (d) omitting the information from the statements altogether. Even though "omitting" seems, at first glance, a completely unacceptable alternative, I do not believe it is. I am sure most of us have seen footnote information that tended more to confuse than to help. Perhaps the General Electric and General Motors complete inventory count examples previously cited fall into this category.

Many topics can be handled directly on the face of the statements. Previously, Skelly and Shell Oil were cited as showing the reserve for bad debts parenthetically on the face of the statements instead of in a footnote as is done by so many. The following examples of parenthetical comments about inventory, however, illustrate a real problem.

"at lower of cost or market" by Columbian Carbon  
 "at lower of cost (partly last-in, first-out) or market" by  
 B. F. Goodrich

"at the lower of cost (accumulated average) or replacement market, except for certain basic materials stated at cost (last-in, first-out method) which did not exceed replacement market" by Glidden

#### CAPITAL STOCK:

##### Cumulative Preferred Shares—

Authorized 300,000 shares of \$100 par value, issuable in series—4½% Series; redeemable at premium of \$4.00 per share; issued and outstanding 150,000 shares.....

\$ 15,000,000    \$ 15,000,000

##### Common Shares—

Authorized 4,000,000 shares of no par value, of which 172,695 shares may be sold to officers or employees without first offering such shares to the shareholders; options are outstanding for 89,645 shares representing 36,995 shares at \$29.00 per share and 52,650 shares at \$34.20 per share; issued and outstanding 1,951,068 shares at January 31, 1958 and 1,948,963 shares at January 31, 1957, at stated value.....

17,030,660    16,969,615

##### AMOUNT PAID IN FOR SHARES IN EXCESS OF PAR OR STATED VALUE.....

9,207,179    9,207,179

##### EARNED SURPLUS (\$28,000,000 not available for dividends on Common Shares as long as 3½% Notes are outstanding).....

59,602,815    57,053,108

\$100,840,654    \$ 98,229,902

\$156,278,533    \$154,428,847

These examples lead to the crux of the question on parenthetical items on financial statements. Do the short notes give adequate disclosure? Do the long ones add so much clutter that they detract?

Longer statements with judicious typography (by which I mean spacing, size of type, and face of type) can be made attractive. The statements need not look cluttered. For example, Sylvania Electric for 1957 shows the contingent liabilities as a three line note immediately following the long-term debt.

Contingent Liabilities: under guarantees of obligation of an unconsolidated subsidiary, \$4,240,000, and as a guarantor of certain financing services for customers, \$1,240,000 at December 31, 1957

Marshall Field & Company (1957) has an excellent presentation showing on the face of the statements preferred stock provisions, surplus restrictions, and stock option provisions.

Separate schedules to present data commonly supplied in footnote form have been used to some extent. These have been discussed previously under the heading of "Footnotes that Replace." Certified schedules such as those used by Bethlehem Steel are very effective. Schedules can also be used to add certain types of information not typically found on the statements such as inventory components and the pricing method and current value of each.

The third alternative to footnotes is the use of the financial review. Typically this is used to repeat in words significant items appearing on the statements and to give additional information, for example, construction programs and units of output. Sometimes, as in the case of Sylvania Electric's 1957 statements, material on stock options was given in the financial review but not in the formal statements or footnotes. Appropriate reference was made to these comments in the statements; as a result there is no question of the fact of disclosure. The questions are technical ones of whether there is disclosure in the statements, of whether the certificate covers these stock option details, and of whether this is the type of material that must be disclosed for the statements to be not misleading. The answer might revolve about whether the facts contradict, replace, add, or repeat.

A number of companies have begged the whole question by incorporating, by reference, the whole financial review into the statements. International Business Machines is an extreme example. As the sole footnote on its statements for 1957 it has, "The financial information on pages 8 to 21 is an integral part of the statement." First there is an ambiguity. Does it mean that pages 8 to 21 are a part of the statements and that they contain financial information or does it mean that whatever financial information is included is a part of the statements? The first interpretation can-

not be intended because five of those fourteen pages are devoted to colored pictures. On the other hand, I am sure International Business Machines did not intend to dodge the issue of what is financial information. By my interpretation, all of the facts given are financial, and I am sure International Business Machines so intended. However, only part of the detail is that customarily found in footnotes. For example, earnings per share, amount of taxes (when specifically shown on the statements), and description of new activities are not typical footnote items. This might be considered an extreme example of the shift from schedule statements to text description.

### Review

Paciolo, author of the first accounting book (1494), and the other early writers used a lot more words than we do in simple journal and ledger entries even though they seem to have had our basic system of debits and credits. Apparently in the following four hundred years our forebears learned to put into symbolic and schedule form the multiplicity of business facts of the day. Accounting statements of twenty-five or fifty years ago were largely schedules with little or no text. Today, statements range from this schedule form to the schedule form supplemented with up to fourteen pages of notes.

Two factors, I am sure, are responsible for this reversion back to text. One is the tremendous growth in the complexity of business. The second is the morals of the times which require far more disclosure than was permitted by management a few decades ago. I have seen recent statements by English writers expressing their amazement at how American business has flourished under the required *excessive* disclosure. Possibly, a third factor is also responsible for this trend toward text as a part of financial statements. Stated in the vernacular, perhaps we are not as smart as

our forebears. Perhaps, on the other hand, as we look back on their work, we see the results of their sagacity and not the pains through which they went in achieving what they passed on to us. This review of foot-noting practice may then be a review of the pains through which we are going in order to solve our problems. Business will grow even more complex. More rather than less

disclosure of facts will come. Therefore, we must look at these problems clearly and must strive to learn to put them into the body of the statements. Otherwise our annual reports will tend to revert to a textual description rather than a codified summary of events of the year and the financial position at the beginning of the new one.

# AMERICAN ACCOUNTING ASSOCIATION

**1959**  
*Convention*

**UNIVERSITY OF COLORADO  
BOULDER  
COLORADO**

**August 24-25-26, 1959**

AMERICAN ACCOUNTING ASSOCIATION

*Preliminary Program for the 1959 Annual Convention*

MONDAY, AUGUST 24

9:00- 5:00 Registration  
5:00 Picnic

TUESDAY, AUGUST 25

9:30-12:00 Session I

*Presiding:*

ROBERT N. ANTHONY, Vice-President, American Accounting Association, Harvard University

*Education for Business*

ALAN CARTER, Ford Foundation, New York

*Accounting Education from the Public Accountant's Standpoint*

LAWRENCE M. WALSH, Haskins & Sells, New York

*Organization of the Accounting Program—Graduate and Undergraduate*

PAUL E. FERTIG, Ohio State University

12:30- 2:30 Luncheon

*Presiding:*

THOMAS D. FLYNN, Vice-President, American Accounting Association, Arthur Young & Co., New York

*Greetings*

QUIGG NEWTON, President, University of Colorado

LAWRENCE D. COOLIDGE, Dean, School of Business, University of Colorado

*Why Research*

LOUIS H. PENNEY, President, American Institute of Certified Public Accountants, L. H. Penney & Co., San Francisco

2:30- 4:45 Session II

*Presiding:*

GILBERT P. MAYNARD, Vice-President, American Accounting Association, University of Iowa  
*Statistical Methods in Accounting and Auditing*

LAWRENCE L. VANCE, University of California, Berkeley

*The Role of Accounting in Decision Making*

RONELLO B. LEWIS, E. F. Hutton & Co., New York

WEDNESDAY, AUGUST 26

9:30-12:00 Session III

*Presiding:*

RUFUS WIXON, JR., Vice-President, American Accounting Association, University of Pennsylvania

*The Professional Development Program*

LOUIS W. MATUSIAK, American Institute of Certified Public Accounts, New York

*Inflation and Company Finance*

RUSSELL MATHEWS, University of Adelaide

*Financial Reporting and the Stock Exchange*

EDWARD T. MCCORMICK, President, American Stock Exchange, New York

12:30- 2:00 Luncheon and Business Meeting

Report of the Secretary-Treasurer  
Report of the Director of Research  
Report of the Editor  
Report of the President  
Change in Annual Dues  
Election of Officers

2:15- 3:00 *Session IV—Concurrent Round Tables*

2:15- 3:30 **Group I**

1. *The Future of the Undergraduate Accounting Major*  
WALTER KELL, Chairman, Syracuse University  
SAMUAL R. HEPWORTH, University of Michigan  
EDWARD L. MCGOWAN, University of South Carolina
2. *Instruction in Management Services by Accountants*  
WILLIAM J. SCHLATTER, Chairman, University of Michigan  
HOMER A. BLACK, Florida State University  
EDWARD L. WALLACE, University of Buffalo
3. *Sampling in Auditing*  
ROBERT L. DICKENS, Chairman, Duke University  
ROBERT N. TRUEBLOOD; Touche, Niven, Bailey & Smart, Pittsburg  
MARVIN TUMMINS, University of Virginia
4. *Methods of Teaching Accounting Systems*  
JAMES B. BOWEN, Chairman, University of Wisconsin  
ROBERT E. SCHLOSSER, University of Illinois  
RICHARD S. WOODS, University of Pennsylvania
5. *Recent Doctoral Dissertations*  
JAMES S. SCHINDLER, Chairman, Washington University

3:45- 5:00 **Group II**

6. *The Forward Look in Management Accounting*  
R. LEE BRUMMETT, Chairman, University of Michigan  
WILLIAM J. VATTER, University of California, Berkeley  
GLENN A. WELSCH, University of Texas
7. *Rate of Return on Capital Investment as a Measure of Management's Performance*  
LEON E. HAY, Chairman, Indiana University  
WILLIAM W. COOPER, Carnegie Institute of Technology  
DANIEL L. SWEENEY, University of Iowa
8. *Content and Objective of the Principles Course*  
RAYMOND J. CHAMBERS, Chairman, University of Sydney  
WILLIARD E. STONE, University of Pennsylvania  
ROBERT H. VAN VOORHIS, Louisiana State University
9. *Reinvestment Depreciation*  
ROBERT JAEDICKE, Chairman, Harvard University  
SIDNEY DAVIDSON, University of Chicago  
MAURICE MOONITZ, University of California, Berkeley
10. *Internal Control and its Significance in Auditing*  
WILLIAM A. TERRILL, Chairman, University of North Carolina  
PHILIP L. DEFLIESE; Lybrand, Ross Bros. and Montgomery, New York  
KEITH W. DUNN; McGladrey, Hansen, Dunn and Company; Cedar Rapids

6:00- 6:45 Reception

7:00- 8:30 Banquet

*Presiding:*

MARTIN L. BLACK, JR., President, American Accounting Association, Duke University  
Presentation of Alpha Kappa Psi Award  
Introduction of 1960 President

9:00-11:30 Dance

# ACCRUED COST, NOT "ACCRUED EXPENDITURES," IS THE ANSWER FOR GOVERNMENT

ERLE CATO

UNTIL quite recently, methods of financial management in government have had relatively little attention from the general public, outside accountants, or other non-Federal individuals skilled in these techniques. Yet this subject is of prime importance to every citizen; a glance at his Federal income tax return will show the reader just how important. Government accountants knew the defects in the system and the type of data produced and took remedial steps in their isolated areas, but since no one agency had clear over-all responsibility it took outside surveys to initiate action on the basic government-wide flaws. The most recent of these surveys is that of the second Hoover Commission which offered a number of recommendations based on a proposal for appropriations in terms of "accrued expenditures."

The opinions stated in this article are those of the author alone and do not necessarily coincide with those of any other individual or agency, Federal or non-Federal. However, an analysis of those recommendations, undertaken against a background of over 20 years experience in this specific field, leads inescapably to a conviction that they will not cure the existing defects.

## *The Accrued Expenditure Plan*

"Accrued expenditures" first came to the author's attention in the findings of another and previous survey of operations of the Department of Defense. This took cognizance of the fact that the military departments entered into a number of long-range and expensive undertakings, of which aircraft procurement and warship construction are examples. Under present

methods, expenditure of public funds for such projects is authorized by the Congress in an appropriation permitting expenditure beyond the period for which the appropriation is made. It was the opinion of the surveying group that the Congress should review these projects annually to determine whether the necessity for them continued. To accomplish this, it was recommended that the expenditure authority base for appropriations be changed to the *value of goods and services which an agency might receive each year*. The name "accrued expenditures" was invented for this new value and it was contemplated that Congressional control would consist of the dollar amount of this authority to be granted to each agency on an annual basis. The second Hoover Commission picked this up from the original survey and reiterated the recommendation as its key proposal. With that single change, the second Hoover Commission plans on perpetuation of the format and procedures used in the present fiscal, or expenditure authority, control.

In order to arrive at the appropriate amount of "accrued expenditure" authority to be granted, the second Hoover Commission recommends adoption of accrual accounting within the executive agencies. Historical costs developed thereby are to provide the basis for an agency budget stated in terms of cost. The budget document will also show the agency's planned increase or decrease in inventories and other resources. This amount, added to or subtracted from the planned cost, provides the amount of accrued expenditure authority to be requested of the Congress. Following enactment of the budget, virtually the same control mechanism as

now used comes into operation; the accrued expenditure authority will be distributed to the headquarters of the agencies by the Bureau of the Budget. However, the field stations of the executive agencies are then expected to submit internal operating budgets to their headquarters, showing the planned use of accrued expenditure authority as a basis for allotments of this authority to the stations. The accrual accounting system will then develop further costs for subsequent budgets while simultaneously controlling use or consumption of the allotment of accrued expenditure authority. The Commission also recommends use of reports showing actual versus budgeted costs. There is no indication as to whether these reports would stop at executive agency level or be forwarded to the Bureau of the Budget. It is notable that the only stated purpose of the internal operating budgets is to show planned use of the allotments and that separate budgets must be submitted for each appropriation regardless of the number of appropriations used to finance an agency.

Since Congressional control will rest entirely on the accrued expenditure control, it will be seen that the only possibility of achieving any degree of cost control under these proposals lies entirely below the Congress and within the executive agencies. Where agency pressure exists, it will be possible to accomplish a degree—but only a degree—of effective financial management and economy. But this was also true before the second Hoover Commission came into being; double-entry accounting systems capable of developing accrued cost of operations existed in some agencies for about 10 years prior to the date of the commission's report, and cost control through internal operating budgets is known to have been in existence since about 1952.

### *Shortcomings of Accrued Expenditures*

The accrued expenditure package falls short in three respects. First, it does not provide a firm and positive Congressional control over operations and cost of operations and it makes inadequate provision for equivalent agency control at any echelon. Second, use of accrued expenditure control will militate against development of accurate costs for use in computing the amount of accrued expenditure appropriations. And, third, it makes no provision whatever for review or control of those items usually reflected in balance sheet accounts. For readers familiar with current fiscal control, it can be said that the accrued expenditure package is a direct perpetuation of the present fiscal control, modified only to the extent of a new control base aimed at a specific condition and provision of a none-too-reliable means of computing the amount of the control base to be provided the agencies.

A clear understanding of the weaknesses of accrued expenditures depends on a basic understanding of the Federal budget structure. Each executive agency has a number of functions for which it is responsible. Each of these would normally be considered as a budget program and would be successively sub-divided to the level considered desirable for management. The Congress attempts to exert its control through provision of a separate appropriation for any budget sub-division it wishes to control. An appropriation is a limitation on the expenditures the agency may make for the purpose for which the appropriation is provided. Accordingly, a single appropriation is sometimes provided for an entire agency, or individual appropriations may be made for budget sub-divisions within an agency. As legal obligations for purchase of labor, supplies, and materials are made, the obligations are charged against the dollar limitation of the appropriation.

As an example of the foregoing, the Veterans Administration budget, when last seen by the author, had separate budget programs for (1) vocational rehabilitation and education and (2) adjudication of veterans claims. The Congress, however, provided a single appropriation for the Veterans Administration, leaving control between these programs to the agency. On the other hand, another agency has programs for (1) research and development and (2) production of its supplies and equipment. In this case, the Congress endeavors to control each program, providing a separate appropriation for each. By far the greatest part of the Federal operating budget goes to agencies financed from multiple appropriations.

*Accrued expenditures control neither cost nor operations*

The second Hoover Commission recommends that appropriations be stated in terms of the goods and services an agency may receive during a fiscal year. So, if the Veterans Administration is authorized to receive \$500,000,000 worth of goods and services, there is nothing to prevent that agency from adding the contents of its depots to the goods and services received to expand the scope of its operations beyond that authorized by the Congress. Conversely, if the \$500,000,000 appropriation exceeds the amount actually required for operations, there is nothing to prevent use of the excess to build up inventories. This, in fact, is common practice in some agencies and is identical with the present situation which so often finds its way into headlines concerning 100-year supplies of various items.

Turning to agencies financed from multiple appropriations, it will be readily apparent that separate appropriations fail to control the functions individually. Assume an installation which has a research laboratory and a manufacturing plant, each fi-

nanced from a separate appropriation. Such installations naturally use a central supply warehouse, not a separate supply organization for each appropriation. The warehouse stocks stationery, usable in the laboratory, the manufacturing plant, or in the headquarters office which supervises both. The stationery inventory drops to the reorder point and an order is placed. Upon receipt of the shipment will it be charged to the research appropriation or the manufacturing appropriation? Or, if it is to be distributed between the two, what will be the basis for distribution? Note that the ratio of budgeted costs cannot be used accurately because the budget was established over a year in advance and current operations are constantly shifting from those on which the budget was based. The author knows from personal experience that since it is impossible to arrive at an accurate charge, there would be a very human tendency to charge the shipment to that appropriation with the most generous allowance. This situation is, again, a perpetuation of a weakness of the present fiscal control.

*Cost data will be questionable under accrued expenditure control*

It appears that proponents of accrued expenditures are relying on the other elements of their plan to cure, or minimize, these weaknesses. First, they rely upon accrued cost data as the base upon which to compute the amount of the accrued expenditure appropriation. If this figure is close enough, it may partially offset the failure in over-all control. So let us examine the effect of accrued expenditure control on these cost data.

Assume a first-line supervisor who, following standard practice, requisitions materials and supplies in a quantity allowing for waste and spoilage. These are charged to cost, of course. The job is finished, some surplus remains. If the surplus

is returned, proved, shown, achieved, turned to for him, tions, addition for the if he h or fails all the "insur be out' and he seeing Since charged ment, able ba consid situat ing th not try down. second line, m press f reported waste, ration will als record: tral su wareh A si labor i The audit, consid to spot ance f of find even if fiably report

is returned to stock, the cost data are improved, the supervisor knows that he has shown the best cost possible and, if the achievement is notable, it may be recognized. At the same time, economy and returns to stock will result in setting a target for him which, if not met in future operations, may lay him open to criticism. In addition, future allotments will be lower for the same operation. On the other hand, if he holds the surplus as "bench-stocks" or fails to practice economy, the reverse of all the foregoing is true, he has a margin as "insurance." Besides, "the warehouse may be out" when he next needs the materials and he will have to answer for not foreseeing his needs. Rationalization is simple. Since the material has already been charged to the accrued expenditure allotment, neither course will affect the available balance of the control. On the basis of considerable experience with exactly this situation, the author feels safe in predicting that the majority of supervisors will not try too hard to hold the reported costs down. The same reasoning applies to the second-line supervisor and so on up the line, minimizing the chance that they will press for actions which will show lower reported costs. The result of such a course is waste, damage, obsolescence, and deterioration of the bench stocks. Greater issues will also be shown by the central inventory records with a consequent increase in central supply stock levels and the attendant warehousing costs and other costs.

A similar case can be built where excess labor is requisitioned.

The countering internal control action is audit, but effective audit will require a considerable number of auditors qualified to spot excessive costs without much assistance from historical costs. The feasibility of finding such a staff is questionable and, even if found, audit costs would be unjustifiably high. And the auditors would simply report to third and fourth-line supervisors

motivated exactly the same as the first-line supervisors.

The author consequently feels that cost accounting performed under accrued expenditure control will develop questionable data as a base for computing the amount of the Congressional budget.

*Validity of "planned change in inventories" is questionable*

Another factor entering into computation of the accrued expenditure appropriation request is the "planned change in inventories and other resources." The amount to be requested equals planned cost plus or minus this change. Computation of materials requirements for the budgeted period is relatively simple, in principle, but there is nothing whatever in the plan upon which to base a Congressional review as to what part of the materials requirements should be met from inventory, what amount should be purchased, and what should be carried over into the next period. This is a loose end which leaves the validity of this figure, too, open to question. And when the necessity of budgeting "by appropriation" for agencies financed from multiple appropriations is added, it becomes even looser.

*Internal operating budgets provide no enforceable control*

Returning to the question of control, the second Hoover Commission, although it has not provided the Congress with an effective control, has provided the executive agencies with a possible control in the form of internal operating budgets. Such budgets are among the most effective tools for good management. However, the only purpose for which these are offered is to arrive at the amount of the accrued expenditure allotments to be made to the field stations. So, unfortunately, this provision falls within the old saw that "You can lead a horse to water but you can't make him drink."

As shown in preceding paragraphs, the only incentive for cost control under the accrued expenditure system is pride in performance. The controlling factor is always the allotment of accrued expenditure authority and, lest there be any doubt on that point, this allotment will apparently be backed up by Section 3679, Revised Statutes, which provides both administrative and criminal penalties for exceeding allotments. With this emphasis on allotments, which the Commission itself condemns in another place, there seems little hope for voluntary use of these budgets for management control.

In summary, every single weakness in the second Hoover Commission plan is directly and immediately traceable to the recommended "appropriations in terms of estimated accrued annual expenditures." Introduction of that factor severely damages or destroys the value of the remainder of the Commission's recommendations.

#### *The Solution—Appropriations In Terms Of Cost*

The author is totally unable to understand why the second Hoover Commission, having done such an excellent job to the point of determining the control to be used, should have suddenly taken off on the tangent of accrued expenditures. Each step taken led directly towards a single logical conclusion, to control cost. Why, then, did the Commission fail to take that last step, to recommend appropriations in terms of allowable accrued cost? To provide a comprehensive control over other deficiencies not identified as yet, why did they not recommend a balance sheet value control?

Such a comprehensive control would begin with two basic budget statements covering all aspects of each agency; an operating cost statement and a balance sheet statement. Each would necessarily be supported by detail schedules showing plans and the narrative explanation related

to those plans. A single such budget should be presented for all operations of each agency.

The operating budget would, as a minimum, list the major functions (corresponding to either present budget programs or appropriations) and would show, as a minimum the planned cost of each. This format would be expanded as required to show comparative costs for preceding periods, with development of historical unit costs and planned work on the supporting schedules. Following review, the Congress would authorize incurrence of a stated dollar cost for performance of the approved program. It is perfectly possible to fix limitations on allowable cost for any subdivision of any function under this method if desired, an impossibility under the other techniques. The authority to incur costs would then be allotted to the agencies and re-allotted to the field stations through internal operating budget procedures.

The balance sheet budget would conform to a general ledger chart of accounts subdivided into the balance sheet items it is desired to control. This statement would probably consist of six columns with a line entry for each general ledger account. The first column would show the historical balance sheet at the close of the most recently completed fiscal year. The second column would show the effect of anticipated operations during that year in which the budget was prepared. The third column would show the anticipated balance sheet at the end of the current year, i.e., Column 1 plus or minus Column 2. The fourth column would show the anticipated result of operations for the budgeted year, taken from the operating budget. The fifth column would show the results of planned non-operating transactions, such as acquisition and disposal of fixed assets and inventories. The sixth column would show the anticipated balance sheet as of the end of the budgeted year and would be fixed as another Con-

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gressional limitation. These limitations would be distributed among the field stations as a part of the internal operating budget procedure.

The balance sheet budget would, of course, require explanatory schedules. As a minimum, schedules would be required to support the column of non-operating transactions. A time-phased schedule of cash transactions reflected in Columns 4 and 5 would be required. It also anticipated that justification would be required for the planned final balances of fixed assets and inventories. For example, an agency would be expected to justify plans to carry over more than those working inventories necessary for 90 days operations or some other reasonable period.

As a final step, which will be appreciated mostly by governmental budget personnel and accountants at working level, all installations would be authorized to offset reimbursements for work performed for other Federal agencies against the costs they incurred in doing that work.

#### *Comparison of Cost Versus Accrued Expenditure Control*

The suggestion contained herein provides the Congress and agency heads with an effective workable control which can be sub-divided to any level deemed desirable for control. Cost can be classified to budget sub-divisions; accrued expenditures cannot. So long as the major sub-divisions of the budget remain firm, it is even easy to vary the level of control from year to year as found desirable. The agency can be controlled as a whole in one year with balance between budget programs left to its head, and, if desired, in the following year control can be exercised by budget program. Either is feasible with a minimum of disruption.

Internal operating budgets, rather than being an appendage to financial controls, become an integral part of that control.

It will be impossible to use inventories on hand to supplement allotments of cost and it will be more difficult to use surplus allotments of cost to build up inventories. Excess supplies can still be issued, but this can easily give the operator trouble in succeeding years. Further, this course cannot be rationalized quite so easily as under expenditure or accrued expenditure control. Cost control is a positive factor in that the more cost consumed, the less will be available for other purposes.

Cost data should improve. Returning to our first-line supervisor, everything said with respect to accrued expenditure control will still hold under cost control. But cost control will reinforce the pride in performance incentive by an immediately available advantage. Return of excess to stock will immediately increase available balances in the cost allotments, promoting flexibility. The same will hold for the second-line supervisor, giving him reason to exercise closer supervision over the first-line supervisor, and so on up the line. As a matter of fact, the author has seen one operation controlled by the fiscal equivalent of accrued expenditures where a supervisor privately admitted possession of bench stocks filling five warehouses. Cost control was subsequently instituted over this operation and the bench stocks started disappearing. The supervisor suddenly discovered that use of his bench stocks was lowering his apparent costs to a point that was giving him impossible cost allowances.

It is anticipated that the Congress would fix inventory limitations primarily on the basis of consumption, such as the 90 day supply mentioned. Such situations as maintenance of stockpiles considered necessary would be provided for through appropriate sub-division of general ledger accounts. As excess is returned to stock through the motivation outlined, these will run into the inventory limitations, forcing disposal of any excess. This, in turn, would

return cash to the Treasury and would reduce the losses and costs related to warehousing of inventories not really required for operations.

Use of the recommended cost and balance sheet control will not only cure every deficiency of accrued expenditures, but will also meet further needs of financial management left untouched by that proposal. In addition to inventory level control, it will provide for a review of fixed assets held with relation to those required for operations. The time-phased schedules of cash transactions will provide a base for sound tax and tariff legislation. They will also provide information facilitating the most economical management of the public debt and advance information as to the result of planned operations on the debt ceiling. If the cash limitation is "allotted" on a time-phased basis, it will eliminate the increasingly frequent necessity for emergency expenditures ceilings to prevent Treasury overdrafts—and the cost of operating those ceilings.

And, finally, note that every single item at which accrued expenditures is aimed must be included in either the operating cost budget or the balance sheet budget, thereby accomplishing the only purpose of that proposal without incorporating the fiscal-type weaknesses and accounting gyrations inherent in its use or the cost en-

tailed in the additional accounting and budgeting operations.

It is frequently alleged that "Government is different. The profit motive is lacking." Two elements are involved in production of profits, sales and cost of sales or production. In every organization of any size, the sales element and the producing element are divorced except at the very top. Control over the producing element is always based on cost control. So if top-level cost control is brought to bear on government operations, the lack of a sales organization will be immaterial. The solution offered herein is simply the cost control over production that has evolved through years of business experience and will be readily recognized as such by accountants and executives experienced in large-scale operations. The only difference lies in conversion of the budgetary targets of business into Congressional limitations. The fund accounting required would be handled through the theory and design of the cash accounts, or possibly cash transaction accounts, of the accounting system that would be used with this proposal.

In conclusion, the author feels that as any governmental entity, Federal, state or local, attains a size requiring substantial inventories or involving significant overhead costs, the only effective way of controlling that entity is through cost control.

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# CORPORATE FINANCIAL REPORTING IN WEST-GERMANY

H. P. HOLZER

*Assistant Professor, University of Illinois*

THE need for uniformity and certain minimum standards of disclosure in the area of financial reporting is universally recognized in all countries where financial reporting plays an essential role in business life. The roads towards this goal, however, may be very different. In the United States, professional organizations of accountants strive continuously to maintain and improve standards of financial reporting. There has been relatively little legislative influence concerning the form and content of financial statements; standards of uniformity and disclosure are achieved largely through the cooperative efforts of accountants and other interested parties. In Germany, and also in other European countries, the same objectives are attained primarily by means of legislation.

## BRIEF HISTORICAL BACKGROUND

Until 1929, the year that marked the beginning of the great depression, the history of German financial reporting ran fairly parallel to developments in the United States. As in the United States, financial reporting in Germany was based largely on accepted principles and procedures of accounting. One rather significant difference was that in those days the German accounting profession had not achieved the same status and recognition that its American counterpart had already held for many years. This lack of a high professional status may have been one of the reasons for the existence of reporting practices which many considered unsatisfactory.

In the course of the numerous corporate failures during the years following the

crash of 1929, many shortcomings and abuses in the field of financial reporting were uncovered. It was then generally felt that more stringent legal requirements concerning published financial statements would be desirable. In 1931, the first German laws regulating corporate<sup>1</sup> financial statements became part of the General Commercial Law Code. Virtually the same rules were incorporated in the Corporation Act of 1937 which is still in effect today.

## STATUTORY REQUIREMENTS

This law contains model balance sheets and income statements, valuation requirements, and provisions concerning the certification and publication of financial statements. Although the rules of the Corporation Act relative to financial statement presentation go into great detail, they are not the only authority on the subject. The authors of the law were aware that a subject as complex as that of financial reporting cannot be regulated entirely by a codified law. The Act, therefore, contains a provision which states that the requirements of the commercial law code shall be applicable whenever a situation is not specifically covered in the rules on financial reporting. This refers to the section of the German commercial law code which requires every businessman to keep "records and accounts in accordance with the principles of orderly bookkeeping."<sup>2</sup> This requirement may be compared with the American practice of observing "generally accepted accounting principles" in matters of ac-

<sup>1</sup> The German Corporation Act requires a minimum capitalization of Dm 100,000 (approximately \$25,000). Businesses with a capitalization of less than that amount must incorporate under a different law.

<sup>2</sup> Commercial Law Code Section 28.

counting and financial reporting.

The model statements of the law were primarily intended to meet the requirements of manufacturing and trading concerns. Special model statements were prescribed by the Minister of Justice for those industries that have specialized statement requirements (such as banks, insurance companies, etc.). The chief purpose of these model statements was to achieve uniformity in the presentation of financial information and to establish minimum standards of disclosure.

#### THE MODEL BALANCE-SHEET

A study of the German model balance sheet will reveal a number of differences in comparison with accepted American practices. The presentation of fixed assets, accrued depreciation, treasury stock, and surplus varies considerably. Most of these differences, however, are due to peculiarities of the German law and become readily understandable to any one familiar with the rules in question. Requirements concerning the valuation of assets and liabilities and the classification of data are, with minor exceptions, comparable to American practices. The degree of full disclosure attained by the model balance sheet appears to be comparable with the highest American standards.

#### THE MODEL INCOME STATEMENT

While the model balance sheet has been generally accepted in its existing form, content of the model income statement has been and still is subject to wide controversy. The model income statement in its present form does not require disclosure of any sales or cost of sales data. The first item listed under revenues is a gross profit figure. Wages and salaries, depreciation, and taxes are the only significant items required to be disclosed under expenses. The law permits an offsetting of interest expense against interest income. It is possible

to show credits resulting from a reduction of surplus accounts as revenue items on the income statement in order to absorb operating and other losses. Usually both the loss and the amount of surplus used to absorb it must be disclosed; some reductions of surplus, however, can be included on the income statement under the catch-all caption of extraordinary gains. This latter possibility naturally invites a smoothing of income figures and there is nothing in the law that would prohibit such a practice. Although it is possible to segregate operating and nonoperating items, it is rather difficult for the average reader to do so because this requires a careful breakdown of the figures presented.

It is quite obvious that the German income statement would not meet American standards of disclosure. The most common argument put forth by the advocates of the present model income statement is that a full disclosure of cost and income data may prove to be damaging to a company's competitive position.

It may be of interest to note that the model income statement is actually the result of a compromise between two opposing factions on the parliamentary draft committee. One group, representing the wishes of industry, wanted no income statement at all, while the opposing group advocated full disclosure of all pertinent cost and income data. The majority of German accountants and business economists have consistently advocated full disclosure for the income statement. It is noteworthy that their efforts have not brought about any improvement during the past twenty-five years.

#### PUBLICITY OF FINANCIAL STATEMENTS

The publication requirements for financial statements are a unique feature of the German law. Every German corporation must publish annually its audited balance sheet and income statement in the official

federal government newspaper, *Bundesanzeiger*. This requirement includes the full wording of the public accountant's certificate and the names of all officers and directors. Oddly enough, it seems that these strict publication requirements, which were enacted in their present form in 1931, are partially due to the fact that corporate stock in Germany is usually closely held. Prior to these requirements there was almost no information on corporate activities available to the general public. In the course of the numerous failures of the 1929 depression, many irresponsible and even fraudulent management practices were uncovered. These failures of big corporations, which affected thousands of people, and the widely publicized abuses in the management of large companies soon became a political issue. It was claimed that many of these abuses and their disastrous results would not have been possible if financial reports had been available to the interested public. The advocates of these strict publication requirements hoped that greater publicity of corporate activities would counteract abuses and further an attitude of greater social responsibility on the part of big business. It should be noted that the law enforced the same degree of publicity for all corporations. It applies equally to small, closely held, family corporations, whose shares are not listed on any exchange and which never offer securities to the general public, as it does to giant corporations which do much of their financing through public offerings of their securities.

#### THE SUPPLEMENTARY REPORT TO STOCKHOLDERS

The German Corporation Act requires every corporation to submit to its stockholders a report supplementing the information disclosed on the financial statements. The requirements of the act divide this supplementary report into two parts. For the first part of the report the law re-

quires that it contain a general report on the past year's operations, comments on the company's general and financial condition, and disclosure of important post balance sheet events. Some companies disclose sales information in this part of the report, but this information is almost never given in monetary figures and only rarely in terms of quantities or units. Usually only percentage changes over the previous year are revealed. Most of the information in the first part of the supplementary report is of a general nature and might be compared to the contents of the president's letter to the stockholders in the published report of an American corporation.

The primary purpose of the second part of the report is to explain the financial statements. This part of the report is considered to be an integral part of the financial statements. Like the statements, it is subject to the annual examination by public accountants and is also referred to in the auditor's short form certificate. The law specifically requires explanations for all major changes of balance sheet and income statement items. Any of the so-called extraordinary items on the income statement must likewise be explained. A rather unusual feature is the required disclosure of all salaries, bonuses, and other compensation paid to each officer and member of the board. Other requirements deal with changes in the capital structure and other matters which are peculiar to the German Law. For example, membership in or association with cartels ("associations regulating prices, distribution, production and similar arrangements") have to be disclosed in this section of the supplementary report.

#### ANNUAL AUDITS BY INDEPENDENT ACCOUNTANTS

The German Corporation Act makes an annual audit by independent public accountants compulsory for all corporations.

Mandatory audits became law for the first time in 1931 and the same provision was incorporated into the act of 1937. This requirement was not only a major factor in establishing the young profession of public accounting more firmly, but it also contributed substantially to the reliability of published financial statements.

#### SUMMARY AND CONCLUSION

The development of financial reporting in Germany presents a classic example of what may happen when detailed legislation regulates the presentation of financial reports. The law achieved two great steps in the right direction at once. Minimum standards of disclosure and a far-reaching uniformity in the field of published financial statements were established and are strictly enforced. However, one cannot help observing certain serious drawbacks of such thorough legislation. It is apparent that, since the enactment of the German Corporation Act in 1937, no further progress has been made. For all practical purposes, there have been no changes at all, no new developments to speak of. This stifling effect is obviously very undesirable. The law was intended to establish minimum standards of disclosure; however, there are only a very few instances in which corporations have gone beyond the minimum requirements and disclosed additional information. It appears that the legal requirements, instead of indicating a minimum standard of disclosure, have come to be accepted as *the* standard. It is true that German business has been known for its great secretiveness, and legislation was necessary to achieve minimum standards of disclosure; however, once such standards are "frozen" into law, it is extremely difficult to bring about any additional improvements. A good example of this can be seen in the difficulties encountered by German accountants and other interested parties in their efforts to bring about a more com-

plete disclosure of income data. Especially during the past two years, they have consistently and very vocally advocated the disclosure of sales information. So far, all attempts to bring about legislation amending the income statement requirements have been unsuccessful. A presently proposed amendment would require an income statement that discloses sales and cost of sales data. The pros and cons of the amendment have been hotly debated for over two years. Opponents are still using the old argument that disclosure of sales and cost data would be extremely dangerous to a company's competitive position. Advocates of the amendment frequently use American reporting practices as proof that full disclosure of income data does not damage a company's competitive position. Opponents to the amendment never fail to point out that American practice generally makes financial statements available only to present stockholders and potential future investors, while the new amendment, because of existing publication requirements, would publicize sales and cost data far more than is common in the United States. Presently there are no indications that any of the efforts to bring about an improvement of reporting practices on a voluntary basis will be successful. It seems quite certain that another round of legislation will be necessary to improve financial reporting in Germany.

In the absence of an established accounting profession and a sound tradition of financial reporting, Germany probably had no other alternative to legislative control—badly needed improvements could be effected only by means of legislation. Subsequent developments, however, have also clearly demonstrated the disadvantages of such "legislated" financial statements. Overly narrow legal requirements tend to stifle the new developments which are always necessary if financial reporting is to effectively serve a dynamic business world.

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# MAJOR INFLUENCES ON ACCOUNTING EDUCATION\*

HARRY D. KERRIGAN

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THE direction, nature, emphasis, and objectives of accounting education, since its beginning at the collegiate level, have been influenced by a number of ideas, conditions, and relationships with other segments of academic work. This paper attempts to outline and assess the roles which the more important of these influences have played in the development of accounting education.

## *Influence of Economics Teachers*

The movement for collegiate training for accounting quickly ran aground in some colleges, due to the opposition of departments of economics. The most kindly interpretation we can make of this would be to say that sellers of the new program were hardly notable salesmen, and hence found no buyers. Instead, they found unsympathetic and even hostile attitudes on the part of economics teachers who viewed with horror the impending debasement of academic offerings by the admission of accounting courses. There were probably other, more earthy motives behind this reaction, but a public forum is scarcely a fit place to discuss them. On the other hand, still another and an entirely justifiable reason doubtless contributed to the feelings of the economics teachers. This was the first-year course in accounting, in both the prospectus of what it would likely be, and in the actual scope of what it turned out to be, as it was offered through the popular texts. This course—open to everybody—was (and largely still is) as unimaginative, as ill-suited, and as unresponsive to the needs of the overwhelming majority of students, as it could possibly be. Small wonder it is, then, why economics teachers

in positions of influence took this direct contact with the accounting program as a significant piece and proof of the stuff which they opposed.

The dominant attitude of the economists in this group of colleges was that business courses in general, and accounting courses in particular, had no place in the college catalog. The study of Marshallian economics, it was asserted, was adequate intellectual nourishment for everybody, supplemented perhaps by a half-dozen courses in the periphery of the field dealing with "applied" studies. These would include such courses as international trade, money and banking, statistics, cycles, relations between government and business, and maybe labor problems.

In other colleges, the movement to establish accounting programs met a different, though equally determined, tactical opposition from the economists. Here the guiding principle of the opposition seemed to be "if competition is formidable, contain it by absorption through merger." Results of the mergers are well known. The new academic child was promptly taken over by the economists as a ward takes over a child. Oftener than not, the ward treated the child as hopelessly retarded, to be listened to but not taken seriously. (One famous Eastern school to this day confers only the degree of "Bachelor of Science in Economics" to all graduates of its business programs, including accounting.) In this picture, accounting programs got the severest handling, and were set back more

\* This is the principal section of a paper read before the 1958 New England Conference on Accounting Education, held at Boston College, June 12-13, 1958. An earlier section of the paper, largely statistical in nature, appeared in *The ACCOUNTING REVIEW* for April, 1959.

than other business areas. The luck of the non-accounting business areas ran better partly due to better selling of the programs, and partly due to the "evidence" that these fields were in a sense "connected" with applied economics. The expression "economics of marketing," for example, had at least a related ring in matters economic.

The earnest efforts of economics teachers in the second group of colleges to stunt the development of collegiate training in accounting, and those in the first group to attempt to bar it entirely—save for a bastardized first course which was of little value to anyone since it tried to serve everyone—form a strange chapter in the history of our field. The yoke of harsh critics is gradually being removed, although the trend is by no means even between colleges to this day. All in all, our relations with the economists in the years since World War II have been less and less those of inferior and superior, and more and more those of mutually respected equals. For our part, we have always sought to show our appreciation of the value of economic knowledge in the total education of our accounting graduates. We have always wanted our graduates to include in their college work a reasonable amount of economics. We would point out, however, that our aim is to train accountants, not economists.

Our relations with the economists have left us with a psychological scar of inferiority complex which will linger with us for a while yet. Economists will continue to exact a heavy share of our students' time and energy in the graduate schools—time and energy which they need badly to increase their competence as future teachers and writers in the field of their choice. Economists will continue to sit on college committees on courses and curricula affecting programs in accounting; they will sit on such committees not as legitimate balance

wheels but as militant guardians of a questionable tradition, enforcing, when they can, their will or whim, keeping us on the defensive, and holding back the progress of our programs as we envisage them. In sum, the influence of the economists while rightly waning will continue for some time yet to exercise an inordinate role in the scope of our offerings and in the training of our teachers.

We need now to clarify a point. The foregoing account of our relations with economists should not becloud or belittle the value of economic reasoning in accounting interpretations. Our struggle with the economists has centered on matters dealing with courses and curricula, not on the use of economic analysis to the extent appropriate to sharpen, clarify, or help develop accounting principles. Opportunity to utilize economic concepts in the thinking on accounting problems has, unfortunately, been availed of so far nowhere near the potentials of the situation. As evidence of this, we need only observe the comparatively little use we have made in the past, through our textbooks, of the field of economics for related analysis material that could help us. One of the few textbooks that has attempted to utilize economic reasoning for purposes of advancing the thinking in accounting has been available for nearly 40 years, and has been carefully kept up to date through timely revisions. Yet this book lies far from the top of the adoption lists. Small comfort it must be to the author of that book to be hailed everywhere this very month of June, 1958, as our foremost teachers' teacher, on the occasion of his retirement from his university post. And small satisfaction there must be for us in the excuses we have thought up of why we have made so little use of that author's books in our classes.

#### *Influence of Business Theorists*

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nomics teachers begun to subside when in the 1930's a new one appeared on the horizon involving their next-of-kin, the business theorists. Although the years have brought these scholars into control of but a few schools, their kind is actively represented on nearly every business school faculty.

In the view of the business theorists, a collegiate school of business should concentrate on subjects dealing with the nature of business enterprise, its changing role in society, its social significance as a decision-making organism, etc. There is also a trend to include critical study of the art of administration *per se*, be it for a business enterprise, an institutional organization, or of government. Business schools, it is felt, should groom graduates as business analysts, the diagnosticians, as it were, of business organization and operation, proficient in all analytical tools of the times, including a medium dosage of social science and mathematics. An important by-product of this program, it is assumed, will be graduates who will continue their studies and develop into scholars and teachers themselves.

Business theorists as a group see little or no justification for practical courses in accounting, marketing, and other functional areas. These courses, they believe, were unfortunately inherited from proprietary "business colleges" of an earlier generation, and should be returned to such institutions, although the "proprietary" feature is considered no longer a necessary or even a desirable requisite for training institutions of this type. There is objection to how-to-do-it courses, other than those oriented toward their own brand of "high-level" specialization. Preparation of graduates for, as they put it, "low-level" specializations is deemed unworthy of the time and talents of a university faculty.

The claims of business theorists are receiving increasing attention, but as yet

cannot be said to be developing into a strong, nation-wide movement. The philosophy of the group has already been felt, however, in some schools. What should our reaction be to this young and provocative idea? Certainly there is room within the business school concept for a core of courses to nourish and develop a central theory of business enterprise, to which "applied" aspects can be related in terms of such things as long and short runs, cyclical fluctuations, and trends in the great distributive shares in social income. The field can be offered as one of the "majors" open to students. It would be another matter, however, to reorganize a business school entirely along this philosophy. Since business theorists raise the same objections to the training of "low-level" specialists such as accountants that advocates of programs of business management do (even though their respective aims are different), we shall withhold further rebuttal until the section following. In the meanwhile, it should be said that our aim is to train accountants, not business theorists, and that the influence of the business theorists on this issue has not yet been fully joined in battle, but perhaps soon will be, sooner than we may anticipate.

#### *Influence of Advocates of Business Management*

This view argues that the purpose of a school of business should be to develop business leaders. It is held that a business school should recognize and then organize and operate on the assumption that its principal if not sole responsibility is to train business school students for high management and executiveship. That is the level, we are told, where problems require high intellectual challenge and full flowering of a sophisticated personality. In this view, business schools would prepare graduates for "careers" instead of "jobs"; would imbue graduates with a feel for solv-

ing problems of "know-what-to-do" instead of "know-how-to-do-it." Presumably, careers for graduates would be waiting for them all over the economy—in enterprises large or small, public or private, profit or nonprofit.

The intended impact of this point of view on courses and curricula of business schools is well known. It calls for little or no specialization in any functional area of business organization and operation, including the accounting function. It would have no place for the training of students for public accounting. It would emphasize, to the near-exclusion of any particular vocational or occupational program, the training for executive responsibility.

What should our reaction be to this proposal? I am afraid the proposal raises more problems than it solves. As with the position taken by the business theorists, it implies support of a shift of education for low-level jobs or job areas to other social agencies, i.e., to other still undefined training institutions at or near college level. Both viewpoints do not deny, yet beg off solving, the needs of society for graduates with vocational or occupational skills that can be put to work right after or soon after graduation from college. These are the graduates who after a short but reasonable breaking-in period, can keep or audit a set of books, prepare or interpret a set of reports, fill out or defend a tax return, design or install an office system or part of a system, sell or make a market survey or advertise goods for sale, keep an inventory in balance, time-study a task, schedule or plan the factory route of a batch of production, and so forth. It has not coped with the realism repeated on every campus every spring when a personnel official puts in his appearance to say that he is instructed by his company to hire, say, three accountants, two market analysts, and one production expeditor.

Our view is that both the business theor-

ists and the business management advocates alike are over-doing a good thing. We could stand by and play the role of spectators to the experiments if in the meanwhile there was no serious threat to the continuation of the functional training programs, including accounting. The fact is there is formidable threat to such programs.

The business management people have taken a useful concept, the need for an adequate understanding of the problems of organization and operation of an enterprise, or some major component of it, and have interpreted it to mean the need for training business executives. It is one thing to teach business school students principles of sound organization, the process of delegation of authority, relations between line and staff personnel, centralized versus decentralized operations, planning and programming operations, incentive and compensation problems of the working force, and similar matters. We would welcome, say, a six-point course on subjects along this line, spread over a college year. This is considerably different, however, from proposing an exclusive program of training bent on grooming executives.

The issue needs further attention. First let us be sure we understand what the advocates of business management envisage the end-product to be. He is to be an executive or one with the potentials of an executive, thanks to his training. One common image of such a person is that he is three-quarters skilled in handling people, and one-quarter skilled in the tools of management. Another is that an executive is the captain of a team. He is supposed to be able to make a smoothly functioning team out of the people entrusted to him. He is accordingly expected to be skilled in reconciling, coordinating, compromising, and appraising different viewpoints and talents of his team, to the end that each member

of the team shall contribute his fullest measure to the solution of problems of operation met by the team

Secondly, let us consider the supply side. Just what proportion of our business school students, under selective standards now in effect and likely to be in effect for some time to come, do business management advocates think have the requisite native ability, personal drive, and qualities of personality for becoming business leaders? As teachers, we are all familiar with grade curves with which we must deal semester after semester. Statistical patterns of grades are not standardized, and never can be, but they cannot be ignored as useless. It would be surprising if there were very many teachers who thought that the grades which they made up were not oftener on the high rather than the low side. And this seems justified on the principle that students should get the benefit of any doubt. But consider the statistics, anyway, as we find them. Could we in fairness say that based on our experience, first-class students—those with ingenuity and high perception—made up more than some 15% of all students who earned a grade of "C" or better? Yet this is the segment of our students that is probably the sole source of college graduates with executive potentials for the team captaincies alluded to above.\* Are students in the remaining 85% to be deprived of business school training?

We may find a helpful lesson in a commonplace example. The captain of a college football team reaches his position in the main through demonstrated skill in one of the specialized functions of team play. The rest of the team, and indeed the success of the team as a whole, depends on the quality of the specialists—the tackles, guards, etc. The workaday world is no different from this in basic principle. Assistants rise from the ranks to become assistant managers, and assistant managers rise to be-

come managers, each working up the ladder of responsibility through his specialized achievements. The manager of a department or division, like the football captain, must depend on specialized knowledge of his force to do his job. The lesson in these examples is that our business school graduates should probably continue to concentrate in one of the well-known functional disciplines which are essential to the operation of a business. For nearly four out of five of our students, the broader function of management, embracing, as it must, planning, organizing, integrating, and measuring the work of subordinates, can best be handled on a modest basis in college, as in a six-point course already suggested. Perhaps a program having a much heavier dosage of management subjects is feasible for the relatively few and select students desirous and capable of following the so-called management program. There is a general feeling among those who have experimented with such a program for under-graduates, however, that the attempt has not been particularly successful. Our judgement is that after graduation people with the aptitude, experience, and opportunity for management roles will arrive in positions to exercise such roles in the normal vertical mobility to which such people will be subject.

In bringing this section to a close, we shall say that as to the program in accounting, we will realize the greatest good to the greatest number of students if we continue, as now, to concentrate on reasonable *depth* of knowledge in accounting, even though it will be impossible within the time that we have to prepare anything like full-fledged accounting specialists. The *breadth* of knowledge, extending to matters of management and business organization, can come later at the rate and dosage de-

\* In all likelihood, only this same 15% could also qualify for the high-level specializations envisaged by the business theorists.

sired by the graduate himself in his own self-development of whatever managerial potential he may show in his work environment. In sum, we want very much to expose our accounting students to the disciplines that make for business leadership, not forgetting, however, that our aim is to train accountants, not executives.

### *Influence of Public Accountants-Turned-Teachers*

From the very beginning, our college curricula in accounting have been influenced by public accountants who have turned to teaching. The founding teachers were recruited almost entirely from public accounting offices. And the public accounting field to this day continues to be the largest single source of new teachers.

College courses in accounting originally depended on the same texts and written exercises that were used by proprietary schools to train high school graduates for public accounting. These texts and their respective teaching aids were used by colleges and proprietary schools alike, and this practice continues at present, though in a lesser degree. The quality of the texts is good for the avowed purpose for which they were primarily written. This was, and is, to serve as stepping-stones into public accounting. There is no real reason for not including in this group, the currently popular texts that dominate the college or university adoptions. The latter—led by the one or two with overwhelming popularity—are perhaps the better-written books of the group. Yet in scope and purpose, they are indistinguishable from the other texts.

The books that have been cited, and others patterned after them, have indeed kept abreast of developments in the accounting world, if one thinks of that world as largely falling within the public accounting sphere of interest. The texts of this line and the resident and correspondence courses in which they have been used

have improved creditably with the years. Speaking generally, these texts have done well in staying up to date with the expanding scope and complexities of public accounting. Together with texts on auditing, cost accounting, and taxes, they certainly are well geared to basic preparation of entrants into that profession. Schools of business, we venture to think, will continue to feature training courses using this type of texts and keeping to the aims implicit in the character of these books. We shall return to the problem of textbooks a little later.

But what should be said at the moment of the influence of public-accounting-oriented courses and teachers? Our answer is that in too many colleges for too long a period of years, course offerings have been limited to or oriented too much towards public accounting. In the perspective of historical evolution, the development is understandable. Public accountants-turned-teachers and practicing public accountants spoke a common language. They were intellectually reared on the same study material. They read the same professional journals, attended the same meetings, heard the same speakers. Often, they served side by side on study committees probing into unsettled questions currently of interest. And in perhaps the great majority of instances, the teachers continued in the practice of public accounting on a part-time basis. In many cities, some public accountants took the reverse role and became part-time teachers, but since our concern is mainly with full-time teachers engaged in part-time public accounting, we will direct our remarks to the latter. Many of these teachers have paid scant attention to the age-old caution that one can scarcely serve two masters simultaneously. They doubtless are engulfed by this danger to the point where the side-line oftener than not has looked and felt like and exacted the

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energies of the main line. The consequences of such a predicament need not be elaborated. Putting aside sacrifices of health and humor and precious family values, we will only say that for the cause of education the price has been high. We are thinking of the probable poor or inadequate availability of these teachers to students outside the classroom, the poor or inadequate pursuit of scholarly effort to advance research in our field, and the possibly poor or inadequate performance even inside the classroom.

An interesting aspect of the subject here is the general reluctance of these teachers to disclose to their classes case materials encountered in their past or present professional practice. The reason one hears most often is that the information must be kept confidential out of respect for the client's right to privacy. A more realistic reason would be that the teachers involved do not take the time to write up their experiences in carefully prepared, teachable cases in which identities of people, places, dates, and values are camouflaged without subtracting from the worth of the material for purposes of teaching.

Our basic appraisal of the influence of public accountants-turned-teachers may be stated as follows. It has supplied too large a proportion of our teachers. It has led to an unreasonable emphasis on public accounting matters in the textbooks which are used widely. The textbooks do not offer a balanced diet of study material; they are incomplete in coverage of the total field of accounting, and insufficient in scholarly content. They are ruttled to the concept that accounting—public, corporate, and governmental—is a practising art which can be learned only on a very limited scale academically on college campuses. This view is simply the other side of the coin that argues that public accounting is a practising profession that is different from, say, law or engineering. The infer-

ence, however veiled, is that accounting is learned mainly by doing, that it is primarily a member of the occupational family of the technological arts and crafts. Schooling for careers in accounting, as with "other" arts and crafts, is all right to a point, but the point is reached relatively early, and after that it is experience that counts. Experience is regarded as the best teacher, to be availed of as soon as possible. Texts are considered as teachers too, but they trail behind in a weak second place.

The view we are examining insists, in other words, that we cannot get from education what we get from experience. We would reply that it is also true we cannot get from experience what we can get from education. The two are not in competition; they are not mutually exclusive. Rather, the two complement each other to the enrichment of both. There is a large and ever-growing body of knowledge of business and accounting in increasingly communicable media that can be effectively transmitted to or assimilated by students in the formal educational process, giving them a maturity of thought which they deserve to acquire in their college years. Our accounting graduates need such maturity of thought more than ever before because of the kind of social and business environment in which they are destined to live and work. Accounting graduates of the present and future must have an increasingly sharper grasp of their speciality than was deemed necessary in the past because of the greater depth of comprehensiveness of the services required of accountants by society. One need only cite the trends in the training programs for lawyers and engineers to illustrate the type of change our field has thus far only inadequately recognized.

What should be said of the teachers who are recruited from public accounting? Many of them have no doubt developed into expert teachers, but many more of them have brought problems with them or have

created problems in their roles as teachers. Like any other profession, public accounting has certain disciplines, the mastery of which is a prerequisite to success. The stern conditioning of certain habits, and attitudes of mind along lines of approach to work-a-day matters, while time-honored disciplines in public accounting, could become handicaps to effective teaching. As a teacher, an ex-public accountant will have to exercise patience with the learning process of our youngsters, most of them scarcely out of the teen-age group, and hardly out of adolescence. As a teacher, he will have to accept and listen to opposing views on problems in order to tolerate different angles and recognize different relationships. If this is not done in the classroom or in the teacher's study, it certainly will not be done in the outside world, and our students will have lost the opportunity to flex their mental muscles during the only time of their life when they have the desire and leisure to do so. As a teacher, our former public accountant would have to take excursions into the historical evolution of particular theories and interpretations, to show how current conventions have developed, and to probe critically into the vulnerable aspects of such conventions. The vulnerable aspects of a convention are the dynamic aspects, the ones that impel change which may move the concept toward fuller development or cause it to be discarded. Our students should be made aware of both the weak and the strong aspects of currently observed conventions, and the teacher has a real responsibility here to see that they do. As a teacher, finally, he must have the ability to talk down to the level of his classes, and to do so without letting his classes realize it.

We welcome the fact that teachers with public accounting backgrounds bring with them certain skills from the audit offices from which they come. We wonder, however, what proportion of these well-mean-

ing people can do this without near-heroic accompanying adjustments to fit them into the considerably different world of student counselling, class meetings, testing, grading paper, lecturing, theorizing, leading discussions, gaining and holding respect of faculty associates in the same and other fields, and doing constructive research in accounting. The results of the past, adding up to 35 years or more, have not been particularly edifying. There are some who think that 35 years form too short a period, considering the fact that things have moved fast and ours is a new field in academic circles, but the majority of the well-wishers of the cause of accounting education will think otherwise.

Our chief point therefore is that the accounting curriculum so far has received an unreasonable emphasis of the public accounting view as represented by former public-accountants-turned-teachers. Texts and teachers alike lean too heavily on this view, whether consciously or not. Our curriculum has skewed in the direction of public accounting in serious disproportion to the facts that warrant it. It is a case of the way college training for accountancy began and has developed through the years. But unless we take corrective action, the situation will continue. And so will the skewness away from balanced programs that should accommodate *all* the important types of accounting careers for which there are opportunities. The relative capacity of public accounting to absorb our accounting graduates has been shrinking and will continue to shrink. Today it is doubted if more than 20% of our graduates enter into public accounting to give it a try before settling down. The annual percentage of our graduates who by aptitude and opportunity devote their working lives to public accounting is probably just half of that, or 10%. Surely it is an unhealthy influence if we have an educational pattern that wittingly or unwittingly is geared to

an occupational interest which only one out of five of our graduates try for a year or two right after graduation, and worse, which only one out of ten like enough, or are liked by it enough, to stay with as a life-long career.

In fairness to public accounting practitioners, let it be said that they have not directly been a party to the cumulative development of things that we have outlined here. They simply are the deserving bearers of the shining badges, and deserving, too, of the thoroughly justified high esteem which society has for their profession. To their predecessors of another generation, as typified by Homer Sweet, Robert Montgomery, John Wildman, Arthur Andersen, John Forbes, to mention but a few, accounting education owes an everlasting debt of gratitude for making the original drives for and giving leadership to the establishment of collegiate training in accounting. In fairness to former public accountants who have turned to teaching and text-writing, let it be said that probably they have been caught in a fast-moving sequence of events and conditions. Some of them are aware of the problems. A lesser number of them are doing something about it. We wish, however, that more of them were more articulate and more actively engaged in taking corrective action. Until improvements appear in substantial scale, we have a case of questionable use of college resources, human and material, and questionable direction of talent development. We are giving students an excessive orientation in matters that most of them will only distantly encounter, if at all; we thereby crowd out of their preparation subject matters much closer to their opportunities after college. In sum, we are aware of our responsibility to train students for public accounting, but our aim can hardly be expected to be restricted to this one objective, even as a principal objective. We want very much to

contribute to the preparation of young people for entry into public accounting. Our aim, however is to train students in all of the important areas for accounting service, not just one comparatively small field with which, to be sure, we have had a long, intimate, and sentimental tie in the past.

### *Influence of Controllers*

Our college programs in accounting have barely begun to feel the influence of the controllers, be they corporate, institutional, or governmental. Here is an influence that has been slow in taking hold thus far. It has, however, the greatest potential for improvement of our programs of training. The controllership market is the biggest market we have to absorb our graduates. The better we are aligned to this market, the better we will be serving the needs of the great majority of our graduates.

We have been aware of our special relations with modern controllership longer than we have done anything serious about it. We have done a lot of preaching as to what we should do, but have taken little or no positive steps to implement our ideas. We have paid lip-service to the necessity of including controllership problems in our accounting programs, but have progressed little or hardly at all beyond that.

A survey of available teaching materials shows that only a handful of books purport to meet the needs of this area. One popular text has lately added a chapter or two on managerial uses of accounting data. These chapters look like islands of discussion—as indeed they must be, since they were simply added to the previous framework—insulated and isolated from the rest of the book. In a post-war book taking “a management approach,” we find a grand preview of this approach, after which the book promptly engages in conventional discourse, with the reader left still waiting for the promised follow-up at the end. Our third book to be cited was devoted entirely

to "managerial accounting" and appeared in a trial edition a few years ago. This effort had the sight and sound of a scholarly dissertation, and understandably was unsuitable as a teaching medium for youngsters. Turning to our cost texts, we observe that they are being increasingly sprinkled with management uses of cost data, but as a group these texts seem bound to remain as primarily texts on cost technology. Finally, recent years have seen several book-length efforts on the functions of controllership. These books appear to be surveys rather than texts. They are studies "about" controllership, not studies "in" the subject, for in the pace they set for themselves, they scarcely begin to unravel the real world of controllership—policies, problems, procedures, all of which require treatment in the unhurried measure expected of a text.

All these efforts fall into the category of patchwork of one kind or another. While they represent an advance over the previous void, they are not full answers to our needs. What we need is a thoroughgoing treatment of managerial accounting that is equal to the rightful demands upon it by modern management. What we need is treatment in depth, in comprehensiveness comparable with other great divisions of our field such as auditing or tax accounting. These are fair and reasonable standards. Unless they are put into effect, we shall leave unmet a large and increasingly important challenge facing us as educators.

The challenge is to revamp our accounting curriculum to match the truly revolutionary changes that have occurred in the scope of accounting services performed in every progressive organization today, be it corporate, institutional, or governmental. These services have had to expand and become more complex to keep up with the equally revolutionary changes in management technique, wherever managerial problems are present. Typically, adminis-

trative functions today are not the concern in any but the smallest organizations of the relatively few at the top whose decisions are arrived at, as someone has aptly said, informally, intuitively, or perhaps subconsciously. The concept of management widely accepted today is all-embracing and organization-wide. It assumes a sizable supervisory hierarchy that is active at all levels, in all areas of authority and responsibility, all over the organization actively is in progress. Such extensive and intensive level-by-level effort of managerial personnel must rest on equally extensive and intensive techniques for planning (including budgeting), controlling, and coordinating, all of which are the responsibility of the organization's controller.

The way to meet this challenge is the way we have met others earlier. It is by design of a whole new series of courses with a whole new series of matching texts and related teaching aids. Only thus can we bring a wholly new perspective to accounting education. There will be less emphasis on historical or after-the-fact results and positions. There will be more emphasis on current or "spot" services to management to help it shape the upcoming facts as well as carry out its routine everyday functions. To put it in other words, there will be more attention to planning—for next week or month, as well as for a more distant period, to evaluation of results post-operatively against predetermined plans or standards, and, before that, to timely interim analyses of the degree in which plans and objectives are being met currently. There will be better measurement of the efficiency of performance—in shop, office, or field, and of the responsibility for performance. There will be greater and more intensive study of data-processing. This is the field that embraces methods and procedures, aided and implemented by

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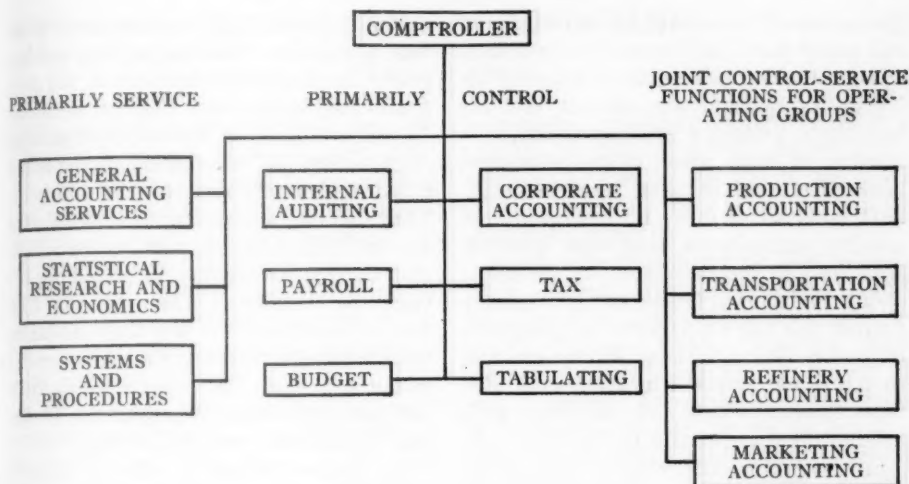
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all types of mechanical devices. The latter include the wonderfully conceived electronic machines which help to cut costs of paper work and speed up the availability and diversify and expand the types of managerial reports. It is the field that plays a key role in design of reports for management that are right in scope, right for the purpose for which they are made up, right in the people that they reach, and right in the timeliness with which they become available.

The present scope of controllership is illustrated in the diagram shown above reflecting part of the organization of a large oil company. Let the reader compare the breadth and depth of functions indicated in the chart with the breadth and depth of training courses now available at his school on the subjects indicated.

### Conclusion

We have attempted to do our bit in joining the discussion, lately rising in pitch, of the long-standing question of how best to train students for careers in accounting within the framework of a collegiate school of business.\* We submit that answers to

the question have changed with the generations, but we have not always kept our answers in tune with changing generations. We trust our record of adaptation and adjustment to the changing times will be better in the future; it has certainly bogged down or at least led to foot-dragging on occasions in the past. In the spirit of a familiar saying, may we have the serenity to accept the things we cannot change, the fortitude to defend the things that should not change, and the courage to change the things that can and should be changed, for the best possible adjustment to the social and business environment of the times.

Each generation of accounting graduates must cope with the demands of their time. As educators we have the responsibility to prepare our graduates as much as possible for their future predicaments. We must be cognizant of the fact that we are training people in fundamentals for a great variety of opportunities after college. Some of our

\* An intriguing question, lying outside the scope of the present discussion, would be the feasibility of a complete and clean break from schools of business and establishment of schools of accountancy that would operate within the university family of schools on a par with such schools as those of pharmacy and engineering.

graduates will become public accountants, but many more will become tax accountants, corporate accountants, systems accountants, machine accountants, cost accountants, budget accountants, and, in a number of large areas of our economy, government accountants, retail accountants, hotel accountants, mine accountants, hospital accountants, brokerage accountants, and so forth. We cannot do much about the fact that most jobs are relatively narrow, nor can we prevent our graduates from gravitating to them. But we can and should in our formal education work give them as broad a base as is consistent with helping them arrive at a fair level of technical competence that should be the mark of accounting graduates who may enter any specialized application which fortune or choice may dictate. It is said that the level of skills of our society must continue to rise to cope with and benefit from the rise in the general level of knowledge. Are we as trainers of accountants keeping up with the expanding services and higher skills which society expects of future accountants?

Each generation of teachers must do its best to eliminate obsolete portions and improve the backward features of the programs they inherit from their predecessors. As we have seen, the features that must be re-examined and eliminated or improved extend over much of the educational front. They include the texts we use, the subjects we teach, the teaching methods we follow, and the teacher-quality to which we entrust our teaching. Our view is that teachers must see to it that their graduates receive nothing less than their full money's worth and their full effort's worth from four years of college, in preparation for the kind of world *they* will be entering.

Our salvation lies in securing our programs against unhealthy or irrelevant influences; in exposing our programs to the light and vigor of beneficial influences; in keeping our educational tools sharpened for the jobs they are expected to do; and, finally, in reorganizing our curriculum as often as necessary to stay abreast of the everchanging demands by the world outside on our graduates and on us as teachers.

# INDUSTRIAL ACCOUNTING

JOHN COUGHLAN

**F**INANCIAL statements have not yet felt the impact of the Industrial Revolution. The accounting concepts of the merchant princes have been developed along lines suitable for merchandising operations but wholly inappropriate for appraising the results and guiding the fortunes of the industrial empires of today. A mercantile accounting pretends to serve an industrial age.

The manner in which contemporary accounting reflects its mercantile origins is outlined below. Then some of the lines along which a truly industrial accounting should develop are suggested and illustrated. Finally, the advantages of industrial accounting are discussed.

## MERCANTILE ACCOUNTING

The mercantile origin of contemporary accounting is apparent in two ways:

1. The basic period for income determination is the year, quarter, month or other arbitrary calendar period.
2. Sales serve as the criterion of revenue recognition.

### *Calendar Periods*

To use the year, or some other arbitrary calendar period, as the basic period for revenue recognition and income determination is quite appropriate to a merchandising operation involving few expenditures for long-term purposes. In such a concern goods may be brought and sold within the calendar period, or a series of such purchases and sales may occur within the calendar period. To the extent that inventory is on hand at the end of the calendar period, an allocation of the cost of goods purchased must be made to that period and to the succeeding period. Such an allocation gives rise to the problems of inventory

accounting. Inventory accounting is not a particularly difficult problem where the inventory is small in relation to the total sales, a condition typical of many merchandising operations.

Most industrial firms of the modern world, however, make large expenditures on depreciable assets, advertising, and research programs. To the extent that these expenditures are made for the benefit of several periods, the problem of determining a unique income for the period of a year, or indeed any other calendar period less than the period of the project, becomes difficult. The mercantile solution to these problems was to build an increasingly elaborate structure for the allocation of expenditures and receipts to arbitrary periods of time such as the year, the quarter, and the month. Thus the cost of organizing a business is sometimes treated as a cost applicable to all future operations of the business, that is, a cost spread over such a long period that a negligible portion of it applies to any given year. Following this approach, the amount amortized in any one year is zero. Sometimes, organization expense is treated as applicable to a short period following the inception of the business—frequently five years. In either case, the concept of income as the excess of the revenues of a particular year over that year's expenses was maintained by treating a portion of the cost of these long-term expenditures as peculiarly associated with the income of a particular year. Other con-

**AUTHOR'S NOTE:** The author is grateful to the National Association of Accountants for the opportunity to work with the Association in the preparation of its research study on "Return on Capital Employed." Many of the ideas expressed in this paper are the result of the stimulus afforded by that study and by participation in an N.A.A. seminar on the same subject. The views presented in this paper are, of course, the sole responsibility of the author and should not be identified with the National Association of Accountants.

ventions were adopted for the treatment of bond discount, prepaid insurance, and a host of other deferred charges and prepaid expenses.

The idea that the balance sheet is the receptacle for a variety of unamortized costs<sup>1</sup> found its fullest development in accounting for the manufacturing plant. Here, through the process of depreciation charges, part of the cost of plant and equipment is transferred from the unamortized cost category each period. However, it is still not assigned to the current year, but is rather treated as a product charge and is considered part of the cost of the inventory and does not become a period charge until its subsequent sale. This complicated process, usually called "cost accounting," is sometimes referred to as "industrial accounting." Nevertheless, it is not a true industrial accounting, but rather a merchant's solution to the accounting problems of a large industrial enterprise.<sup>2</sup>

#### *The Sales Criterion*

This fantastically complicated structure designed for the determination of "income for the year" is not the only evidence of the mercantile origins of contemporary accounting. Another major clue is the criterion of profit recognition. While accountants sometimes recognize profit at the time of *production* (in the mining of precious metals and long-term construction), and sometimes at the time of *collection* (instalment sales), by far the commonest criterion of revenue recognition is *sale*. Surely sale is a merchant's criterion of profit recognition.

#### INDUSTRIAL ACCOUNTING

##### *Calendar Periods versus Project Periods*

Mercantile accounting stresses the ability to determine income for arbitrary short periods of time. Industrial accounting should focus attention on the period of the project as the basic period for income de-

termination.<sup>3</sup> Mercantile accounting attempts to paint an accurate picture of the income resulting from the operations of the particular year. Industrial accounting should portray an increasingly accurate view of the income derived or to be derived over the period of the project.

#### *Classification By Time*

Once an arbitrary calendar period is dropped as the basic period for the determination of income, the significance of the distinction between product charges and period charges vanishes. For transactions entered into for the purpose of furthering a particular project, all expenditures and receipts become period charges and period revenues. The difference between expenditures and expenses, and the difference between receipts and revenues, both crucial distinctions for mercantile accounting, lose all significance in industrial accounting.

The most useful classification for receipts and expenditures in the framework of industrial accounting is classification by the year in which received or spent. Subclassifications by purpose of expenditure (advertising, selling and administrative ex-

<sup>1</sup> Probably the outstanding exposition of this view of the balance sheet is William A. Paton and A. C. Littleton, *An Introduction to Corporate Accounting Standards*. (Columbus: American Accounting Association, 1940).

<sup>2</sup> Some of the early mercantile operations involved the risk of large sums of capital in long-run ventures. Thus a group of merchants might purchase a ship and send it on a long and perilous voyage to acquire goods or spices. In such cases, the complicated expense allocations so typical of contemporary mercantile accounting were not made. Like industrial accounting, to be described presently, income was determined for the project period rather than for an arbitrary calendar period. Unlike the industrial accounting proposed here, however, no attempt was made to estimate that income until the voyage was complete and the net income to be derived from it no longer a matter of conjecture.

<sup>3</sup> Municipal accountants have long recognized that the important period of time for the operations of a building program under a bond fund is the period required to build the structures rather than arbitrary calendar periods. This approach has not yet had any parallel in industrial accounting although the important period for a long-term industrial development is surely the peculiar period of the project rather than the arbitrary and universal periods into which time is divided by the calendar.

penses, and so on), and by object of expenditures (materials, labor, etc.), are still permissible and useful. But the type of receipt and expenditure classification that is most useful for decision-making in large-scale industrial undertakings is a classification by time. Whether a dollar was spent for salaries or supplies becomes less important than when it was spent and how long it was before the original expenditure was "returned" by receipts.

#### *Recognition of Estimated Future Receipts*

An accounting that has no place for the distinction between expenditures and expenses has no room for depreciation. Does it follow that because a major expenditure is made in a particular year, that the income for that year must be correspondingly low because the full expenditure is recognized in the current period? By no means. Since income over the life of the project is being measured, the present value of estimated future cash inflows should be entered in the accounts. The true significance of the price paid for a new piece of equipment is that it is excellent evidence of the present value of the future increase in net receipts anticipated by the businessman. Indeed, many economists have been so adamant in their insistence on this proposition that they have argued that depreciation should attempt to reflect changes in these estimates of future net receipts. The correct solution is not, however, to make the cost of an asset less the accumulated charges for depreciation reflect the present value of estimated net receipts but rather to scrap depreciation entirely and enter future net receipts directly in the accounts.

Similar remarks apply to inventory accounting. Once money has been spent on the acquisition of inventory, the expenditure has been made and there is no point pretending that no expense has been incurred by showing the cost of that inven-

tory on the balance sheet rather than on the income statement. It is permissible, however, to show the expected future receipts from the sale of that inventory on the balance sheet. Inventory is significant to the business because it increases the expectations of receipts to be derived from its sale, or, alternately, because the possession of the inventory reduces the expected future cost of acquiring such inventory to meet the following year's sales. Just as the important thing about the possession of machinery and equipment is the expectation of future receipts to be derived from their use, so the important thing about inventory is the expectations concerning the future. Once the expenditure on inventory has been made, it makes no sense to pretend that the accountant has in some manner prevented the cost from being incurred by assigning such cost to the balance sheet.

#### *Sales versus Time*

The mercantile criterion of revenue recognition is *sale*. The industrial criterion is *time*. In judging the merits of a long-term investment, the important thing is not the extent to which the products resulting from that investment have been sold but the extent to which the overall estimated income on the project has been realized through the passage of time. The industrial accountant should think of realization in the same way the investor thinks of his earnings on a bond.

The various differences between mercantile and industrial accounting are summarized in Exhibit I on the following page.

#### ILLUSTRATION OF INDUSTRIAL ACCOUNTING

These recommendations can be understood better by seeing how they might be employed in a simple situation. The Industrial Company buys a plant and operates it for three years before abandoning it. The financial statements of this com-

EXHIBIT I  
CONTRAST BETWEEN MERCANTILE AND INDUSTRIAL ACCOUNTING

<i>Mercantile Accounting</i>	<i>Industrial Accounting</i>
Focuses attention on arbitrary calendar periods (years, months, and so on)	Focuses attention on the period a project is in operation (e.g. life-span of a plant)
Classifies cost between product and period charges	Classifies by year or other period of time
Depreciates buildings and machinery and amortizes costs incurred for the benefit of more than one period	Includes estimated future receipts and expenditures in its financial statements
Employs sales as its realization criterion	Employs time as its realization criterion

EXHIBIT II  
FINANCIAL STATEMENTS OF THE INDUSTRIAL COMPANY FOR 1959

<i>Mercantile Accounting</i>	<i>Industrial Accounting</i>
<b>Balance Sheet 12/31/59</b>	<b>Balance Sheet 12/31/59</b>
Cash..... \$ 400,000	Cash..... \$ 400,000
Equipment..... 600,000	Estimated future net receipts..... \$900,000
	Less unearned income..... 300,000
<u>\$1,000,000</u>	
	Present value of estimated future net receipts..... 600,00
	<u>\$1,000,000</u>
Capital stock..... <u>\$1,000,000</u>	Capital stock..... <u>\$1,000,000</u>
	<b>Estimated Receipts and Expenditures 12/31/59 to 12/31/62</b>
	1960 estimated net receipts..... \$ 300,000
	1961 estimated net receipts..... 300,000
	1962 estimated net receipts..... 300,000
	<u>Total estimated net receipts..... \$ 900,000</u>
	Less 1959 expenditures..... 600,000
	<u>Anticipated project income..... \$ 300,000</u>

No comparable operating statement

pany during this period are presented and explained in the following pages.

### 1959

The company was organized and commenced business on the last day of 1959. On that date it issued stock for \$1,000,000 in cash, and then used \$600,000 of the cash for the purchase of the plant and equipment. Since both these events occurred on December 31, 1959, there was no time for operations of any kind, and accordingly the only relevant financial statement for mercantile accounting is the balance sheet appearing in the left half of Exhibit II.

The financial statements that would be prepared by the industrial accountant appear in the right half of Exhibit II. Like the mercantile balance sheet, the industrial balance sheet has cash and capital stock. Unlike the mercantile balance sheet, however, the industrial accountant does not show as an asset past expenditures on the equipment but rather expected future receipts from its use. The basis for this estimate of future receipts is usually at hand in the form of the projection that was made to justify the purchase of the asset.

The operating statement presented by the industrial accountant also appears on the right of Exhibit II. This statement, in

the first year at least, is also derived from the projection made to justify the purchase of the equipment. The estimated net receipts appearing on this operating statement are the same estimated net receipts appearing on the balance sheet.<sup>4</sup> The expenditures for the purchase of the plant and equipment are deducted in full from these estimated net receipts;<sup>5</sup> in mercantile accounting they appear on the balance sheet. The difference between the estimated net receipts to date and the actual expenditures to date is the anticipated project income of \$300,000. Note that this income relates to the full lifetime of the project. Since the company was organized on the last day of the year, none of the anticipated project income can be considered "earned" in any sense of the word. The "unearned" income on the project appears both on the income statement and also on the balance sheet.<sup>6</sup> The function of the unearned income on the balance sheet is to reduce the estimated future net receipts to their present value. Note that the present value of the estimated future net receipts (\$600,000) is identical in this case to the figure at which the equipment is carried on the mercantile balance sheet. This equivalence follows from the fact that the balance sheet was struck on the same day as the equipment was purchased. The true significance for accounting purposes of the price paid for depreciable assets intended to be used in the business is that this price gives a minimum estimate of the present value of the equipment's services in the eyes of the company. If the company had not thought that the present value of the services to be derived from this equipment was worth at least \$600,000, it would not have paid such a sum for the equipment.

Since both revenue and expense are part of the complex structure accountants have erected for the purpose of allocating income to the different years of a project's

lifetime, the necessity for their existence disappears when we drop arbitrary calendar periods as the basic period of account and instead adopt the lifetime of a project. In presenting the projected income statement for the lifetime of a project, we can instead deal with receipts and expenditures. Since these terms probably mean more to the average reader of financial statements than the term "Income Statement," the project income statement might well be dubbed "Statement of Estimated Receipts and Expenditures." Until the project is completed, the project income will, of course, be "anticipated" rather than actual. As each year passes, figures for actual net receipts replace those for estimated net receipts, and the accuracy of the figure for anticipated project income increases. What the statement presents is an increasingly accurate estimate of the income to be derived over the life of the project.

Traditional income statements, it may be noted, are not less "estimated" and the profits they arrive at are no less dependent on future events than this statement of receipts and expenditures and the anticipated project income it portrays. The only difference is that accountants *appear* to be talking about objective presentations

<sup>4</sup> The entry for these estimated future net receipts follows:

Dr. Estimated future net receipts . . .	\$900,000
Cr. 1960 estimated net receipts . . . . .	\$300,000
1961 estimated net receipts . . . . .	300,000
1962 estimated net receipts . . . . .	300,000

It is the credit portions of this entry that appear on the industrial operating statement. The debit portion appears on the balance sheet.

<sup>5</sup> The industrial accounting entry to record the purchase of the equipment follows:

Dr. 1959 expenditures . . . . .	\$600,000
Cr. Cash . . . . .	\$600,000

<sup>6</sup> The entry follows:

Dr. Anticipated project income . . . . .	\$300,000
Cr. Unearned income . . . . .	\$300,000

The debit portion of this entry appears on the operating statement. (It corresponds roughly to the debit to profit and loss account to close out profit to retained earnings.) The credit portion of the entry appears on the balance sheet as the figure reducing estimated future net receipts to their present value.

EXHIBIT III  
FINANCIAL STATEMENTS OF THE INDUSTRIAL COMPANY FOR 1960

<i>Mercantile Accounting</i>				<i>Industrial Accounting</i>			
Balance Sheet 12/31/60				Balance Sheet 12/31/60			
Cash.....		\$	700,000	Cash.....		\$	700,000
Equipment.....	\$600,000			Estimated future net receipts.....	\$600,000		
Less allowance for depreciation.....	200,000	400,000		Less unearned income.....	144,606		
				Presented value of estimated future net receipts.....		455,394	
			\$1,100,000				\$1,155,394
Capital stock.....		\$1,000,000		Capital stock.....		\$1,000,000	
Retained income.....		100,000		Retained income.....		155,394	
			\$1,100,000				\$1,155,394
Income Statement Year Ending 12/31/60				Estimated Receipts and Expenditures 12/31/59 to 12/31/62			
Sales.....		\$	700,000	1960 net receipts.....	\$	300,000	
Less.....				1961 estimated net receipts.....		300,000	
Depreciation.....	\$200,000			1962 estimated net receipts.....		300,000	
Other expenses.....	400,000	600,000		Total estimated net receipts.....	\$	900,000	
Net income.....		\$	100,000	Less 1959 expenditures.....		600,000	
				Anticipated project income.....	\$	300,000	

of historical facts by talking about expense allocations instead of receipt expectations.

### 1960

The financial statements of the Industrial Company for the year 1960 appear in Exhibit III. It has been assumed here that the original projection is borne out by the events of 1960. In accordance with the original projection, cash sales amount to \$700,000. All expenses other than depreciation amount to \$400,000 and these are all paid in cash during the year. There is no inventory, and there are no receivables and payables at the end of 1960. Depreciation is computed on the straight-line basis for a three-year life. The left-hand column again presents the contemporary, that is, mercantile, financial statements.

The industrial accountant's financial statements appear in the right-hand column. The "1960 estimated net receipts" that appeared on the statement of esti-

mated receipts and expenditures at the end of the previous year is now replaced by "1960 net receipts" since these receipts are now known and are no longer a matter of conjecture.<sup>7</sup> Since expectations about receipts and expenditures were realized during the year, the statement of receipts and

<sup>7</sup> The entries follow:

Dr. 1960 expenditures.....	\$400,000	\$400,000
Cr. Cash.....		
To enter expenditures.....		
Dr. Cash.....	\$700,000	\$700,000
Cr. 1960 receipts.....		
To enter receipts.....		
Dr. 1960 estimated net receipts.....	\$300,000	
Cr. Estimated future net receipts.....		\$300,000
To remove estimated net receipts from income statement and balance sheet to make way for actual figures.....		
Dr. 1960 receipts.....	\$700,000	
Cr. 1960 expenditures.....		\$400,000
1960 net receipts.....		300,000
To close actual receipts and expenditures to statement of receipts and expenditures.....		

expenditures prepared at the end of the year is almost identical to that prepared at December 31, 1959. There is, however, one important difference. Part of the receipt expectations (the 1960 portion) is no longer a matter of estimate, and the expectations for 1961 and 1962 are no longer quite so far in the future. Accordingly, the statement of receipts and expenditures might, as part of its heading, have information about the date on which it was prepared.

How much of the anticipated project income of \$300,000 has been earned? The correct criterion of income realization for an industrial concern is *time*. Here we look at the rate of return on investment that a particular project yields and then determine, on the basis of the passage of time, how much income has been earned. The correct way to determine the rate of return for an industrial project is the "discounted-cash-flow" method. The return on investment as determined by the discounted-cash-flow method is that rate of interest which, if used to discount the future cash inflows would equate them to the outlay at the inception of the project. In the present case, if an interest rate of 29 per cent is used to discount the estimated cash receipts of 1960, 1961, and 1962, these present values will exactly equal the initial investment of \$600,000. In other words, the present value of 1960 net receipts of \$300,000 discounted for one year at 29 per cent plus the present value of 1961 net receipts of \$300,000 discounted for two years at 29 per cent plus the present value of 1962 net receipts of \$300,000 discounted for three years at 29 per cent total \$600,000.<sup>8</sup> Since 29 per cent is the rate of return on this project, we can apply 29 per cent to the original investment of \$600,000 less the cash receipts of \$300,000 flowing in during the first year to determine that the amount of income earned on the project is \$155,394.<sup>9</sup>

The amount of unearned income

(\$144,606) may be derived either by subtracting the earned income as determined above (\$155,394) from the anticipated project income (\$300,000), or it may be derived by determining the present value of the estimated future net receipts. At the end of 1960, the estimated future net receipts are \$300,000 for 1961 and \$300,000 for 1962 for a total of \$600,000. If the estimated 1961 net receipts are discounted for one year at 29 per cent and the 1962 estimated net receipts are similarly discounted for two years, the present value is found to be \$455,394 (see balance sheet). The difference between the estimated future net receipts of \$600,000 and their present value of \$455,394 is the unearned income of \$144,606.

The breakdown of the anticipated project income between earned and unearned income follows:

Earned income.....	\$155,394
Unearned income.....	144,606
Anticipated project income.....	\$300,000

The earned income has been transferred to retained earnings; in the present case, with no prior earnings and no dividend payments, the earned income for 1960 corresponds with the balance in retained earnings at the end of the year. The unearned income appears on the balance sheet where it serves to reduce estimated future net receipts to their present value.<sup>10</sup>

<sup>8</sup> For more detailed discussion of the discounted-cash-flow method, see National Association of Accountants, *Return on Capital Employed* (New York: National Association of Accountants, 1959), Chapter 9. The illustrations in this paper are based on the assumption that the net receipts flow in at a uniform rate throughout the year and that interest is compounded continuously. The present value table in the Appendix of the National Association of Accountants' report is based on these same assumptions.

<sup>9</sup> Note the assumptions about the interest rate and the source of appropriate tables cited in the previous footnote.

<sup>10</sup> The entry transferring earned income to the retained earnings category follows:

Dr. Unearned income.....	\$155,394	
Cr. Retained income.....		\$155,394

EXHIBIT IV  
FINANCIAL STATEMENTS OF THE INDUSTRIAL COMPANY FOR 1961

<i>Mercantile Accounting</i>				<i>Industrial Accounting</i>			
Balance Sheet 12/31/61				Balance Sheet 12/31/61			
Cash.....		\$	900,000	Cash.....		\$	900,000
Equipment.....	\$600,000			Estimated future net receipts.....	\$448,850		
Less allowance for depreciation.....	400,000	200,000		Less: Unearned income.....	61,044		
				Present value of estimated future net receipts.....		387,806	
			\$1,100,000				\$1,287,806
Capital stock.....		\$1,000,000		Capital stock.....		\$1,000,000	
Retained income.....		100,000		Retained income.....		287,806	
			\$1,100,000				\$1,287,806
Income Statement Year Ending 12/31/60				Estimated Receipts and Expenditures 12/31/59 to 12/31/62			
Sales.....		\$	600,000	1960 net receipts.....	\$	300,000	
Less.....				1961 net receipts.....		200,000	
Depreciation.....	\$200,000			1962 estimated net receipts.....		448,850	
Other expenses.....	400,000	600,000		Total estimated net receipts.....	\$	948,850	
				Less 1959 expenditures.....		600,000	
Net income.....			0	Anticipated project income.....		\$	348,850

## 1961

To illustrate the flexibility of industrial accounting, let us assume that in 1961 the net receipts differ from the projection. In the mercantile version of this company's accounts, it is seen that sales exceed expenses only by enough to "cover" depreciation; there is no income for the year. (See the left-hand column of Exhibit IV.)

The right-hand column of Exhibit IV gives the industrial accounting version of the statements of this company. Note that the statement of receipts and expenditures reflects not only the reduced actual net receipts of 1961 but also reflects a revision in the company's estimates of the amount of income to be derived in 1962. (Perhaps firm sales contracts for the coming year are well ahead of previous expectations.) Taking into account the \$100,000 by which 1961 net receipts fell below estimated net receipts and the \$148,850 increase in the estimated net receipts for 1962, the antic-

ipated project income is seen to rise from \$300,000 at the end of 1960 to \$348,850 at the end of 1961.

The return on investment using this new statement of receipts and expenditures is 30 per cent per annum compounded continuously. In other words, if we pick some reference date and discount or accumulate all the receipt figures to that date, they will total the same amount as the expenditure of \$600,000 discounted or accumulated to that date. For example, if December 31, 1959 is used as our reference date, the present value of the net receipts of the succeeding three years is \$600,000 which sum is equal to the initial investment which need not be discounted or accumulated in this case since it occurs at the reference date.

To illustrate this concept of return on investment further, choose December 31, 1961 as the reference date. The amount of the investment at this reference date is the original investment plus two years' interest

## EXHIBIT V

## COMPUTATION OF EARNED AND UNEARNED INCOME AT DECEMBER 31, 1961

	Initial Investment Less 1960 and 1961 Net Receipts	1962 Estimated Net Receipts	Net Income
Values at December 31, 1961:			
At 30% per annum compounded continuously.....	\$387,806	\$387,806	
At 0% per annum.....	100,000	448,850	\$348,850
Earned income.....	\$287,806		
Unearned income.....		\$ 61,044	\$348,850

on it less the amount of net receipts of 1960 and 1961 applied to the repayment of the investment and also less the reduction in interest occasioned by this repayment of part of the initial investment before the end of 1961. Consequently the unreturned investment at this date may be computed as follows:

Initial investment.....	\$ 600,000	
Two years' interest: \$600,000 × .8221.....	493,260	
Amount of investment if there were no receipts in 1960 & 1961.....	\$1,093,260	
Less: 1960 net receipts.....	\$300,000	
Interest on 1960 receipts:		
\$300,000 × .5743.....	172,214	
1961 net receipts.....	200,000	
Interest on 1961 receipts:		
\$200,000 × .1662.....	33,240	705,454
Unreturned investment at December 31, 1961.....	\$ 387,806	

(The decimal factors in these computations are the compound interest on \$1 for the relevant period at 30 per cent per annum compounded continuously.) The present value of the 1962 estimated net receipts at December 31, 1961 may be computed as follows:

1962 estimated net receipts × present value of

$$\$1 = \$448,850 \times .8640 = \$387,806$$

Note that the unreturned investment at December 31, 1961 is identical to the present value of the estimated future net receipts at that date. That is, the rate of return on investment as the term is used here,

is the rate of return that equates the cash inflows and the cash outflows at a common reference date.

These figures serve as the basis for the computation of the earned and unearned portions of the anticipated project income. In Exhibit V the first column is used to compute the earned income. On the first line of Exhibit V the unreturned investment appears. On the second line, the unreturned investment if there were a zero interest rate appears. It is the excess of the initial investment of \$600,000 over the net receipts of 1960 (\$300,000) and 1961 (\$200,000), or \$100,000. The difference between the unreturned investment at 30 per cent and at 0 per cent is the earned income of \$287,806, and this figure appears as the retained income on the balance sheet on the assumption that no dividends have been paid. The balance in the unearned income account is \$61,044. (See Exhibit V.) This amount appears on the balance sheet and is used to reduce the estimated future net receipts to their present value. (See Exhibit IV.)

## 1962

The accounts for 1962 appear in Exhibit VI. It is assumed that the actual net receipts for 1962 are \$400,000. If the company's estimates about the expected life of the equipment were correct, that is, if the equipment is worn out or obsolete at the end of the third year, then no further net receipts can be expected from the equip-

EXHIBIT VI  
FINANCIAL STATEMENTS OF THE INDUSTRIAL COMPANY FOR 1962

Mercantile Accounting			Industrial Accounting		
Balance Sheet 12/31/62			Balance Sheet 12/31/62		
Cash.....		\$1,300,000	Cash.....		\$1,300,000
Capital stock.....	\$1,000,000		Capital stock.....	\$1,000,000	
Retained income.....	300,000	1,300,000	Retained income.....	300,000	1,300,000
Income Statement Year Ending 12/31/62			Receipts and Expenditures 12/31/59 to 12/31/62		
Sales.....		\$ 900,000	1960 net receipts.....	\$ 300,000	
Less			1961 net receipts.....	200,000	
Depreciation.....	\$200,000		1962 net receipts.....	400,000	
Other expenses.....	500,000	700,000	Total net receipts.....	\$ 900,000	
Net income.....		\$ 200,000	Less 1959 expenditures.....	600,000	
			Project income.....	\$ 300,000	

ment and the project income of \$300,000 is not anticipated but actual. All earnings are realized and transferred to the retained income account.<sup>11</sup>

To summarize this illustration, a comparison of the amount of income reported by mercantile accounting and by industrial accounting over the three-year period appears in Exhibit VII. In mercantile accounting income for the year is very much dependent on the haphazard criterion of sales and on expense allocations. With industrial accounting there is no strictly comparable figure for income *for the year*. However, part of the anticipated project income as considered as earned *in the year*, and this part is dependent on the overall return on investment over the life of the project and on the amount of the unreturned investment during the year. Thus, the income earned during the year is comparable to the interest income on a mortgage which depends on the interest rate and on the unpaid principal of the mortgage loan. In industrial accounting, the important thing is not income *for the year*, or even income *in the year*, but the increasingly accurate estimate of the income for the lifetime of the project. (See final column of Exhibit VII.)

EXHIBIT VII  
COMPARISON OF MERCANTILE AND  
INDUSTRIAL REPORTING OF INCOME

	Mercantile Accounting	Industrial Accounting	
	Income for the Year	Income Earned During Year	Anticipated Total Project Income
1960.....	\$100,000	\$155,394	\$300,000
1961.....	0	132,412	348,850
1962.....	200,000	12,194	300,000
Total...	\$300,000	\$300,000	

ADVANTAGES OF INDUSTRIAL ACCOUNTING

Now that industrial accounting has been illustrated, the reader is in a better position to appraise its merits. The advantages of each of the major changes involved in the adoption of industrial accounting are summarized here.

<sup>11</sup> Where the mercantile accountant closes out his income accounts at the end of each year, the industrial accountant closes out his receipts and expenditures accounts when the project is completed by the following entry:

Dr. 1960 net receipts.....	\$300,000	
1961 net receipts.....	200,000	
1962 net receipts.....	400,000	
Cr. 1959 expenditures.....		\$600,000
Anticipated project income		300,000

### *The Project Period*

Mercantile accounting attempts to do what no accounting can do. It attempts to determine the income peculiarly produced by the efforts of a particular year even though many of the expenditures were made not with expectations of benefit in any particular year but rather with expectations of benefit over their full life. When a company buys a depreciable asset, when it engages in an advertising campaign or a research program, it does not think of part of the expenditure being related to the benefits to be derived from a particular year and another part from the benefits of another year. It relates the whole expenditure to *all* the benefits to be derived from its use. If decisions are made with regard to the full period for which the project is expected to continue in operation, why should accounting choose as its basic period for income determination the arbitrary calendar periods falling within that project period? If decisions are made with respect to one period, accounting should appraise those results with the same period in mind.<sup>13</sup>

### *Estimated Future Receipts*

Once the basic period for income determination becomes the project period rather than arbitrary calendar periods, the whole complex structure of expense and revenue allocation becomes pointless. Surely no one can regret the passing of the endless arguments about expense and revenue allocation. How much time and money have been wasted in debating the merits of alternative methods of pricing inventory and depreciating fixed assets!

Particularly welcome will be relief from the quest for the "correct" or "true" depreciation formula. No alchemist sought the formula for gold more diligently than the accountant has sought the "ideal" depreciation formula. Neither had any suc-

cess because what does not exist cannot be discovered. There is no "best" depreciation formula.

The absence of a "correct" or "best" depreciation formula seems surprising in view of the fact that the accountant professes to be doing nothing but providing an objective record of historical fact. If accountants are doing nothing but providing a record of historical fact, then the diversity of answers that equally skilled accountants get when confronted with the same situation is surely strange. The answer to this riddle, of course, is that accountants are not really writing history but projecting the future when they depreciate assets. If it is known that a depreciable asset will become obsolete in a shorter period than that used in setting the depreciation rate, the depreciation rate is increased to take into account the shorter period. If it is known that a depreciable asset will remain in service much longer than originally anticipated, the depreciation rate is reduced. Thus changing estimates of the future do affect the accountant's determination of current income but not completely and certainly not directly. The indirect manner of recognition of changes in future prospects is to change the allocation of past costs.

One of the great advantages of industrial accounting is that it places the uncertainty or subjectivity in accounting where it should be—on the estimate of the future. If it is future receipts that accountants, tax lawyers and public utility commissions are arguing about when they debate depreciation policy, why not discuss these future receipts directly rather than flounder in an

<sup>13</sup> A similar conflict between the decision-making unit and the accounting unit occurs in costing joint products. Since decisions about the production of joint products relate all the receipts from both products to the joint cost, no accounting technique can satisfactorily assign part of the costs to one product and part to the other. The search for the "ideal" or "true" method of allocating joint costs is just as fruitless as the search for the "true" depreciation method.

attempt to discover the "correct" depreciation formula?

A considerable advantage of industrial accounting is that it solves the long-standing dispute about cost and value. Should replacement cost or some estimate of current cost appear on the balance sheet, or should the accounts adhere to the cost of depreciable assets? Accountants have often pointed out that the value of depreciable assets has little relevance to the balance sheet because the company does not intend to sell the assets themselves but rather their services. Furthermore, the total of the values of the individual assets might be quite different from the value of the assets in combination. While this argument about the irrelevance of the "current cost" or "market value" or "replacement cost" (or whatever other version of value was being considered) is difficult to refute, it also makes one decidedly uneasy about the relevance of cost. If the value of a depreciable asset is not what it could be sold for, but rather what the sale of its services will bring, shouldn't this value—that is, the present value of estimated future net receipts—be entered in the accounts? Now it is true that cost serves as a good estimate of the expected future net receipts from depreciable assets, but it only serves as such an estimate at the time of purchase. Ten years after the date of purchase, original cost is no evidence that the present value of these future receipts is 40/50ths of the cost of a depreciable asset with a life expectancy of 50 years. Yet, in arguing that unamortized cost should be carried in the balance sheet at 40/50ths of its cost, the Internal Revenue agent is making just such an assumption, even though the assumption is very implicit and very well hidden amid discussions of accounting method and depreciation policy. In short, cost becomes just as irrelevant to accounting as replacement cost in a few years' time.

A by-product of industrial accounting would be to restore the significance of the balance sheet. Present balance sheets contain two radically different types of account. One type includes the accounts that represent values. Cash, accounts receivable, accounts payable, are all examples of accounts that represent values in one sense or another. Another type of account is that which represents unamortized expenditures. The best examples of these are inventory and depreciable asset accounts. It has been pointed out above that these accounts reflect—very indirectly and very imperfectly—the values of future receipts. Much emphasis has been placed on inventory-pricing and depreciation formulas with the result that the connection between these unamortized expenditures and future expectations is increasingly tenuous. Furthermore, accountants have been increasingly prone to emphasize the income statement at the expense of the balance sheet. Thus the "last-in first-out" or Lifo inventory-pricing formula almost completely jettisons the idea of a balance sheet. An advantage—a great advantage—of industrial accounting is that it restores the significance of the balance sheet by removing from it all accounts that purport to represent expenditures and including in it only accounts that represent "values."

A related advantage of industrial accounting is that the treatment of various types of expenditure would be consistent. Mercantile accounting is inconsistent in its treatment of expenditures for depreciable assets (treated as unamortized expenditures) and its treatment of research and advertising programs (treated as current expenses). The real reason for this inconsistency is, of course, related to future expectations. The accountant is willing to treat as an unamortized expense the expenditure on a depreciable asset with a ten year life expectancy because the asset is tangible, its life is subject to engineering

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estimates, and the accountant somehow feels it is safe to say that the company will benefit in the future. But the intangibles involved in substantial research and advertising programs are so large that he is unwilling to make any implicit assumptions about future receipts. The only significance of expenditures on depreciable assets and of expenditures on research and advertising is the expectation they raise of future receipts. It is permissible to set up an estimated future receipt expected from the services of a depreciable asset if such a receipt can be expected, and there is no objection to excluding an estimated receipt for advertising and research programs if their effects on future operations cannot be predicted. But there is little basis for saying that equipment cost should be capitalized because it is a capital item and research should be expensed because it is a period charge. The basis of a balance-sheet valuation for either equipment or research is the same—the expectation of future net receipts.

#### *Classification by Time*

If the structure of expense and revenue allocation is discarded so that the distinction between capital and expense and the distinction between product charges and period charges disappears, what should be the new type of classification of account? The main type of classification, as already indicated, is that between accounts representing values (the balance-sheet accounts) and those representing receipts and expenditures.

On the income statement, the most useful type of classification would seem to be one distinguishing the years in which the various expenditures and receipts occurred. Subclassifications by selling, administrative, etc., expense might serve some purpose just as similar subclassifications serve a purpose in contemporary accounting. However, the type of classification that

seems most appropriate to appraising the results of industrial enterprises is a classification by the years in which the expenditure or receipt occurs. Such a classification is identical with that used for capital budgeting purposes by several companies and has become popular in the business journals as the basis of calculating rate of return by the "discounted-cash-flow method." This classification permits a computation of the return on investment for the project that is comparable with the return on investment computed for various financial investments such as bonds.

In effect, this classification restores time to accounting. Present-day income statements mingle current sales with expenditures on inventory made in the previous year and expenditures on depreciable assets made twenty years in the past. Such a mingling is only permissible provided the reader of financial statements is aware of the gaps in time that may exist between the date different items on the income statement may have occurred.

#### *Time as the Realization Criterion*

The classification of expenditures and receipts by periods of time permits a ready distinction between earned and unearned income. In determining earnings on a long-term investment, the investor takes into account how long his money has been tied up in the investment. A similar criterion of earnings should be employed by an industrial company rather than the criterion of sales. At best, sale is a merchant's criterion of profit realization. An industrialist's criterion must surely be time.

#### CONCLUSION

Perhaps the most comforting feature of mercantile accounting is that it purports to be a historical record based on the objective and provable events of the past. Inasmuch as accounting is used in the settlement of many disputes, it is reassuring to

be able to calculate income correct to the nearest penny. Furthermore, confidence is enhanced if it is known that accounting involves no wild-eyed estimate of the future but is based on solid historical fact. Such comfort, such reassurance, such confidence are without the slightest foundation. An accounting that presented nothing but an accurate historical record of the past would not bear the slightest resemblance to contemporary accounting. If a plant is expected to have a life of fifty years, and its cost less accumulated depreciation is so shown on the balance sheet, a prediction, a very important prediction, about the future has been made. Industrial accounting's contribution here is to make the forecast explicit rather than to give accounting an undeserved appearance of certainty by hiding the forecast in the welter of cost allocations.

If desired, industrial accounting could present nothing but an objective record of historical fact; in other words, it could make no estimate of expected future receipts. Similarly, mercantile accounting could present an objective record of the past; in other words, depreciable assets and inventory could be expensed in the year of purchase. Nevertheless, some estimate of the future seems necessary to any worthwhile portrayal of the results of a long-term industrial undertaking if any such portrayal is to be presented before the termination of the business. Probably many an accountant has said that "while investors and economists must make subjective estimates of the future, they will be best

served by the accountant if he presents them with an objective record of the past."<sup>13</sup> Such a view is, however, basically absurd. The accountant who has just completed his audit is in a position to tell the investor and the economist a great deal about the past of a business. He is also in a position to build the future into the accounts in such a manner as to present information unknown to the investor and the economist. If he does not do so, he is denying them information that only he can give. He can exclude the future only at the expense of lessening the usefulness of the financial statements. In any case, industrial accounting does not differ from mercantile accounting through its dependence on the future. It does differ from mercantile accounting by making that dependence apparent.

If the effect of the future on financial statements were made apparent through the use of industrial accounting, the change in emphasis would have a salutary effect on the activities of the accounting profession. The business community must surely be getting tired of the endless debates about inventory pricing and depreciation policy. Wouldn't the business community welcome a change in accounting that resulted in fewer appeals to authority to support complicated expense concepts and more reliance on the results of market research and engineering studies?

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<sup>13</sup> The quote is from an unpublished seminar paper of my own. Similar quotations may be found in any current accounting periodical.

## PRICING INTRACOMPANY TRANSFERS

HAROLD BIERMAN, JR.

*Associate Professor, Cornell University*

SINCE the end of World War II there have occurred two interesting business phenomena which in many respects are contradictory. One has been the large number of business combinations (mergers and acquisitions) which have resulted in an increase in the complexity of business organizations. The other has been the spread of the use of decentralization or divisionalization as a means of controlling large corporations. Many of these corporations are the result of business combinations. Thus firms seek the advantages of large size and smallness simultaneously.

This paper will review one problem of decentralization; the problem of intracompany pricing.

### *The Need for Transfer Prices*

If an automobile company buys its glass from an independent glass company the price is set by market forces. The automobile executives can determine the cost of glass by looking at purchase invoices. If the automobile company creates a glass division to manufacture all the glass it needs, a transfer pricing problem is created. The assembly division will "buy" from the glass division. The units sold must be priced, and by necessity the price set will not be the true market price since the sale was not an arm's-length transaction.

However, this price will determine to a large extent the glass division's profits (by affecting revenues), and the profits of the assembly division (by affecting costs). The price will not directly affect the profits of the company as a whole, though there may be indirect effects via the decisions made using the accounting information incorporating the transfer prices.

### *Conflict of Interests*

It should be recognized that decentralization retains the basic goal of profit maximization for the corporation as a whole. Decentralization attempts to gain that goal by having division managers act in the interests of their own divisions. To the extent possible, the intracompany pricing method should be consistent with maximizing the profits of the company and the division.

Will it always follow that a division manager acting to maximize the profits of his division, will be acting to maximize the profits of the corporation? Hirshleifer and Cook have both supplied illustrations in which the rational action of the division manager (consistent with maximizing the profits of the division) is not consistent with maximizing the profits of the company.<sup>1</sup>

Do the gains arising from simulated competition and decentralized authority exceed the losses arising from decisions aimed at maximizing division profits rather than corporate profits? We shall avoid answering this question by assuming there is agreement that the intracompany pricing scheme should be designed to facilitate the maximization of corporate profits rather than divisional profits. Any disagreements that arise because of the conflict of interests should be resolved by an impartial arbitration board (made up of one or more top level executives), but to as great an extent as possible the trans-

<sup>1</sup> J. Hirshleifer, "On the Economics of Transfer Pricing," *Journal of Business*, Vol. XXIX, No. 3 (July 1956), pp. 172-184. Paul W. Cook, Jr., "New Technique for Intracompany Pricing," *Harvard Business Review*, Vol. 35, No. 4 (July-August 1957), pp. 74-80.

fer pricing system should be designed to avoid conflicts. Hirschleifer offers an ingenious system of "taxes" and "bounties" to solve the problem of conflicting interests.<sup>2</sup>

Many executives would object to the weakening of decentralization by the procedure which in effect overrules decisions made at the division level because the decisions were not consistent with the maximization of the profits of the company. The objections have some validity, but are not possible of being proved or disproved.

### Transfer Prices Available

The intracompany prices may be established in several ways. These include:

- a. Market price (may be determined by printed price lists, invoices, or other evidence).
- b. Marginal costs.
- c. Variable costs (variable costs may be used as a substitute for marginal costs because of the difficulty of determining the marginal cost curve).
- d. Full cost (this may be actual or standard cost, and may or may not include an amount of "reasonable" profit).
- e. Negotiated price.

The intracompany pricing problem has frequently been approached from the point of view of the one procedure which is correct. This paper will attempt to show that all of the above alternatives are reasonable and that the choice of the method to be used can be made only after the purpose for which the information is to be used is determined. At its best, accounting information is raw material which to be useful to management must be processed. Without analysis any intracompany pricing scheme may lead to faulty information and decisions.

### Uses of Divisionalized Data

What are the uses of the accounting data determined for the decentralized operating units? The intracompany prices are the

basis of the revenues of one division and the costs of the other, thus the pricing method directly affects the basic reports of the operating units. These reports may be used as follows:

- (a) Measuring the performance of the management of the division.
- (b) Decision making.
  1. Make or buy decisions.
  2. Pricing policy for the end product.
  3. Output decisions of components and end product.
  4. Capital budgeting decisions and decisions to drop products.
- (c) General financial information.
  1. Determination of income of the corporation.
  2. Determination of the financial position of the corporation.

We shall attempt to analyze which one or more of the intracompany pricing methods best fills the needs of management towards accomplishing the uses listed.

### Measuring Performance

The best method of intracompany pricing for purposes of evaluating management of the selling division is market price. In the absence of an easily determined market price, it may be necessary to use negotiated prices or a combination of market and negotiated prices. The use of market price simulates the market conditions which the divisions would face if the divisions were separate corporate entities rather than subdivisions of one business organization.

While market price may be the most desirable method it must be recognized that it will not lead to 100% correct answers. For one thing there is the problem of determining the market price. Anyone who has purchased an automobile knows that market price is not always equal to the list price. Industrial prices are also

<sup>2</sup> J. Hirschleifer, "Economics of the Divisionalized Firm," *Journal of Business*, Vol. XXX, No. 2 (April 1957), pp. 96-108.

confused by special terms of payment, freight absorption, quality concessions, etc.

Even assuming the market price can be determined, the question still remains as to whether the market price is a fair price. For example, the selling division may have a more or less captive market, thus have less selling expense than the firms setting the market price. Should the selling division get the entire benefit of these savings?

A more troublesome problem exists when there is no market price. For example, if one division conducts research which is applicable to another division, at what price should the research be sold? Obviously the sale price must be solved by negotiation, possibly supplemented by arbitration. In a research type of operation there is no market price, and costs incurred are not relevant in setting the value of the research.

It must be recognized that, lacking a market price, any reports or measures resulting from the intracompany price are even more arbitrary than the normal accounting report. Do such reports and measures of efficiency do more harm than good? Certainly a management faced with recurring situations for which intracompany transfers cannot be priced objectively should reconsider the pros and cons of decentralized accounting reports aimed at measuring income and return on investment. In situations of this nature other measures of performance than the above should be established.

There are several reasons for not basing the transfer price on cost. The use of variable costs (or marginal costs) would almost automatically lead to a deficit for the supplying division. The use of full cost, with or without a reasonable profit, would be better than variable costing. The prime difficulty is the determination of the cost of the product. Should actual or standard costs be used? Are inefficiencies to be

passed on to the purchasing division? The use of cost as the basis of the transfer price places a large burden on the cost accounting department. By-products of a transfer price system based on cost are numerous arguments on what is cost.

While it is suggested that the selling division use a market price to compute its revenues, the marginal costs of the selling division should be used to determine the cost to the purchasing division.<sup>3</sup> The use of marginal costs to determine the transfer price to the buying division is not a sufficient constraint to lead to optimum output, but it is a necessary one.

### Decision Making

Four general types of decisions were listed under decision-making. These were (a) make or buy, (b) pricing of end product, (c) level of output, (d) capital budgeting decisions, and decisions to drop products.

All of the above decisions must be made using either marginal or incremental cost techniques from the point of view of the corporation as a whole. Hirshleifer has shown systematically that the pricing and output decisions must be solved using the marginal costs of the several divisions, but the individual division's best interests may not be the same as those of the corporation. Neither full costs nor market prices can be used as transfer prices in making these decisions.

The make or buy decision requires knowledge of those costs which can be avoided by purchasing the product. This requires a cost breakdown which is not supplied by the market price. The same type of information is required for the decision whether or not to drop a product. These are non-marginal decisions and must be solved using differential revenues and costs.

<sup>3</sup> The use of both market price and marginal cost was suggested to the author by S. Smidt, Associate Professor of Managerial Economics at Cornell.

The effect of transfer pricing on capital budgeting decisions has been somewhat confused by the literature on the subject. For example, Joel Dean has implied that negotiated competitive prices are necessary for sound capital budgeting decisions.<sup>4</sup> Actually a capital budgeting decision made by a division buying components from another division should be based on the incremental cash inflows and outflows which will result from the investment. These flows are tied to variable and semi-variable cost, not to the market price of intermediate products purchased from other divisions of the company.

Thus for some decision-making purposes (make or buy, capital budgeting, and reducing operations) the differential costs of the goods transferred from division to division should be known. For decisions of a marginal nature such as pricing or output, the marginal costs of the transferred product must be known for optimum solutions.

#### General Financial Accounting

The general financial accounting reports require that inventories be recorded at cost to conform to generally accepted accounting principles. This cost must be full cost, including manufacturing overhead, but not including any element of unrealized profit (i. e. profit not realized by

sale to a party outside the corporate organization). This requires that the accounting group in the central office be supplied with unit costs of products by the selling division. The element of divisional profit (or loss) must then be eliminated from the inventory of the purchasing division and the income of the selling division in preparing consolidated financial statements.

#### Summary

This paper has attempted to show that no one method of transfer pricing can fill the needs of a decentralized corporation.<sup>5</sup> The uses of the information have been isolated and the methods best accomplishing the objectives of significant reporting have been identified as shown below.

No pretense of absolute correctness has been made for any of the pricing methods. The admitted inaccuracies must be weighed against the unmeasurable gains resulting from having decentralized operations and decision-making. One final conclusion should be noted; the greater the significance of the intradivisional transfers the more unreliable are the measures of income of the divisions.

<sup>4</sup> Joel Dean, "Decentralization and Intracompany Pricing," *Harvard Business Review*, Vol. 33, No. 4 (July-August 1955), p. 66.

<sup>5</sup> For a different point of view see W. E. Stone, "Intracompany Pricing," *ACCOUNTING REVIEW*, Vol. 31, No. 34 (October 1956), pp. 625-627.

Use	Method of Pricing
Measuring Performance	—Market price (negotiated price if market price is unavailable).
Decision Making	—Marginal costs, —variable costs (as a substitute for marginal costs), and —differential costs.
General Financial Accounting (reports prepared in accordance with generally accepted accounting principles)	—Full cost of product (excluding intracompany profits).

# ACCOUNTING FOR OBSOLESCENCE—A PROPOSAL\*

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IN THE editorial pages of the November, 1958, *Journal of Accountancy*<sup>1</sup> appeared comment under the heading "Conclusion of the Atlas Plywood Story." Among others, one significant statement was as follows:

"What is not generally realized is that losses from write-down of assets, abandonment of plants or product lines, and similar matters can follow from sudden decisions of management and radical changes of policy which significantly alter the financial situation in the year when they are made. The auditors have no control over these policy decisions."<sup>2</sup>

Of interest to us is the possibility that these losses may have occurred in time periods prior to the year of change in policy. And if this is the case, to what extent should this have been reflected in financial reports prior to the year of management's "sudden decisions"?

For some time, we have been exploring the feasibility of a change in accounting procedure regarding obsolescence of fixed assets. Because of the Atlas incident, and because the notion of economic usefulness was raised in the annual report of Atlas, we feel that this is an appropriate time to submit our proposal. Should others feel that our suggestions are constructive, we intend to supplement this paper with one dealing primarily with the mechanics of measurement and its attendant problems.

## PRESENT ACCOUNTING VIEWS ON OBSOLESCENCE

The following definitions of obsolescence are found in accounting literature: "This term obsolescence is usually defined broadly

to embrace the *entire effect* of the progress of invention and technical improvement."<sup>3</sup> And "obsolescence in the narrow sense represents the effect of inventions and technical developments upon plant assets in use."<sup>4</sup> These effects may be (1) so compelling as to dictate the immediate retirement of the affected asset, or (2) of lesser magnitude, reducing the utility of the asset without necessitating its immediate replacement. Here an asset is considered totally obsolete when its replacement is dictated by economic considerations. Partially obsolete is the state that exists when a replacement for an existing owned asset is made available, but economic analysis does not dictate replacement. That is, the inferiorities of the old asset in relation to the new are not material enough to warrant the outlay for the new.

The effects of technology may either be predictable or unpredictable at the time of asset acquisition. Predictable effects of technological change give rise to what is termed ordinary obsolescence; unpredictable change results in extraordinary obsolescence. Thus, four possible categories of obsolescence can be identified:

\* The authors acknowledge the help of their colleagues, Sidney Davidson, Samuel Laimon, and H. M. Weingartner.

<sup>1</sup> *Journal of Accountancy*, Vol. 106, No. 5, pp. 32, 33. See also "The Mess at Atlas Plywood," *Fortune*, Vol. LVII, No. 1 (January, 1958), p. 118.

<sup>2</sup> *Ibid.*, p. 33.

<sup>3</sup> Rufus Wixon and Walter G. Kell (ed.) *Accountants' Handbook* (New York, The Ronald Press Company, 1957), p. 17. 3, (emphasis supplied)

<sup>4</sup> William A. Paton and William A. Paton, Jr., *Asset Accounting* (New York, The MacMillan Co., 1952), pp. 237-238.

I. <i>Total</i> <i>Obsolescence</i>	II. <i>Partial</i> <i>Obsolescence</i>
a) ordinary	a) ordinary
b) extraordinary	b) extraordinary

It might help in clarifying this classification to give more extended definitions of these four categories and to describe the accounting recognition of each.

#### I. (a) *Total Ordinary Obsolescence*

The effect of technology is such that at some date prior to physical exhaustion of the asset it should be replaced. This effect is considered predictable at the time of acquisition of the asset.

Accounting recognizes the effects of total ordinary obsolescence through the periodic depreciation charge. The original life estimate of an asset is based on its economic life which may be determined by expected obsolescence. It is this life estimate which is one of the determinants of the yearly depreciation charge.

#### I. (b) *Total Extraordinary Obsolescence*

The effect of technology is such that at some date prior to physical exhaustion of the asset it should be replaced. This effect is unpredictable at the time of acquisition of the asset, although it may become predictable at some time prior to retirement.

Total extraordinary obsolescence is accounted for in two ways: (1) By recognizing premature retirement after the first life estimate is made but before actual retirement, which requires an increase of the periodic depreciation charge for the remaining (shortened) life<sup>5</sup> or (2) in the absence of this recognition of premature retirement, accounting write off is limited to the period of retirement.<sup>6</sup>

#### II. (a) *Partial Ordinary Obsolescence*

The effect of technology is such that at some date the usefulness of the asset in

each remaining period of use is reduced but the estimated service life of the asset is not changed.<sup>7</sup> This effect is considered predictable at the time of acquisition of the asset.

This form of obsolescence is recognized only insofar as diminishing charge methods of depreciation are used and are a measure of the predicted loss in utility of an asset due to obsolescence. If other depreciation methods such as straight line are used, or if diminishing charge methods are based on other criteria, no reporting of partial ordinary obsolescence is then made.

#### II. (b) *Partial Extraordinary Obsolescence*

The effect of technology is such that at some date the usefulness of the asset in each remaining period of use is reduced, but the estimated service life of the asset is not changed.<sup>7</sup>

This effect is unpredictable at the time of the acquisition of the asset.<sup>8</sup>

That this form of obsolescence is not recognized is evidenced by (1) accounting theory and practice, (2) Internal Revenue Service ruling, and (3) decisions of the courts.

##### (1) *Accounting Theory and Practice*

It appears that accounting interest in obsolescence exists only when asset retirement is imminent. For example:

"... technological advance requiring retirement of assets due to obsolescence."<sup>9</sup>

<sup>5</sup> Perhaps also required is the correction of prior years' depreciation charges.

<sup>6</sup> This obsolescence however is not recognized if the asset *should be* but is *not* replaced (See discussion below).

<sup>7</sup> If the estimate of service life were shortened this would be a prediction of total obsolescence.

<sup>8</sup> There may, of course, be combinations of these categories of obsolescence. Thus an unanticipated technological event may both reduce the utility of an asset within each of the remaining periods of use and also lead to earlier than anticipated retirement. In this situation we have partial extraordinary obsolescence (IIb) *now* and can *predict* total extraordinary obsolescence (Ib) at some future date.

<sup>9</sup> Wixon and Kell, *Loc. cit.*, (emphasis supplied).

Extraordinary obsolescence is obsolescence resulting upon development of more economical methods of production, frequently due to radical changes or new inventions, resulting in greater efficiency and lower costs, and sometimes due to new legislation, which may render the continued operation of the old asset *unprofitable or impossible*, or sometimes due to changes in economic conditions."<sup>10</sup>

"Obsolescence: the loss in usefulness of an asset, occasioned by the approach to the stage of economic *uselessness* through progress of the arts;"<sup>11</sup>

"any event or condition which renders the continued use of a fixed asset (which is still physically capable of use) *inexpedient, impracticable or impossible* is a cause of obsolescence."<sup>12</sup>

In each of the above quotations the underlined phrases imply complete obsolescence only.

An examination of many annual reports and of *Accounting Trends and Techniques*<sup>13</sup> also failed to provide any evidence of the recognition of partial obsolescence.

### (2) Internal Revenue Ruling

"Present bureau practice recognizes only one of the two principal effects of obsolescence. The one which causes the actual retirement of the assets; no real recognition is given to the effect of obsolescence in reducing value to the owner during life."<sup>14</sup>

The stand of the bureau in regard to obsolescence is stated as follows:

"Normal obsolescence is caused by factors which can be anticipated with substantially the same degree of accuracy as other ordinary depreciation factors such as wear, tear, corrosion, or decay. . . .

Extraordinary or special obsolescence rarely can be predicted prior to its occurrence. However, this does not necessarily imply that the asset must have been completely discarded or become useless, but merely that a point has been reached where it can be definitely predicted that its use for its present purpose will be discontinued at a certain future date."<sup>15</sup>

### (3) Court Decisions

In 1932, the Supreme Court held that:

"Obsolescence may arise from changes in the arts, shifting of business centers, loss of trade, inadequacy, supersession and other things which apart from physical deterioration operate to cause plant elements or the plant as a whole to suffer diminution in value."<sup>16</sup>

This apparent support for recognition of "partial obsolescence," however, was preceded by a 1939 Supreme Court decision which limits recognition of obsolescence to effects on service life only, rather than on any diminution of value.<sup>17</sup> Several more recent circuit court decisions echo this 1939 ruling.<sup>18</sup>

In summary, it would appear that accounting, supported by the position of the Internal Revenue Service and the courts, currently recognizes obsolescence only if it results in the retirement of assets, and the effects of partial extraordinary obsoles-

<sup>10</sup> A. A. H. Bohtling, "Some notes on handling tax and accounting problems of extraordinary obsolescence," *Journal of Accountancy*, Vol. 90, No. 3, p. 236, (emphasis supplied).

<sup>11</sup> Eric L. Kohler, *A Dictionary for Accountants* (Englewood Cliffs, N. J., Prentice-Hall, Inc., 1957), p. 332, (emphasis supplied).

<sup>12</sup> H. A. Finney and Herbert E. Miller, *Principles of Accounting, Intermediate* (Englewood Cliffs, N. J., Prentice-Hall, Inc. 1958), p. 353, (emphasis supplied).

<sup>13</sup> American Institute of Certified Public Accountants, *Accounting Trends and Techniques in Published Corporate Annual Reports* (New York: American Institute of Certified Public Accountants, 1958).

<sup>14</sup> Eugene L. Grant and Paul T. Norton, Jr., *Depreciation* (New York: The Ronald Press Company, 1949), p. 231.

<sup>15</sup> U. S. Treasury Department, Bureau of Internal Revenue, Bulletin "F", *Income Tax Depreciation and Obsolescence—estimated useful lives and depreciation rates*, revised January, 1942, p. 3.

<sup>16</sup> *U. S. Cartridge Company v. United States*, 284 U. S. 511 (1932).

<sup>17</sup> *Real Estate-Land Title & Trust Company v. United States* 309 U. S. 13 (1939).

<sup>18</sup> For instance: *Southeastern Building Corporation v. Commissioner of Internal Revenue* 148 F. (2d) 879 (1945). *Delroit & Windsor Ferry Company v. Woodworth, Former Collector of Internal Revenue*, 115 F. (2d) 795 (1940). *Becker v. Anheuser-Busch, Inc.* 120 F. (2d) 403 (1941).

cence are not reported in accounting statements.

#### PROPOSED RECOGNITION OF PARTIAL OBSOLESCENCE

Dissatisfaction with accounting treatment of obsolescence has a long history. Peloubet in 1936 critically discussed the problem of obsolescence.<sup>19</sup> In 1939 an exhaustive article on "Measurement of Obsolescence of Capital Goods" was published in *The Journal of Business*.<sup>20</sup> In 1949 we find the following: "one reasonable criterion for the writing off of cost through depreciation accounting is that the general tendency of the accounting method adopted should be one to create depreciated book values not in excess of the current value of assets to their owners in the light of the most economical available substitute."<sup>21</sup> In the *Accountants' Handbook*, in a section other than the one quoted previously, appears this statement: "the measurement of the decline in value of plant assets due to obsolescence is a difficult problem. Measurement should include *comparison of alternative processes and procedures* . . . and when obsolescence definitely exists . . . the allowance for depreciation or other appropriate valuation account should be adjusted for the amount of the loss in value."<sup>22</sup> In the light of the above and with the help of modern equipment replacement analysis, which makes the quantification of obsolescence possible, a revision of present practice in accounting for obsolescence is proposed.

The following simplified illustration is used to explain our proposed accounting for obsolescence. A machine (asset A) is owned with a book value of \$5,000, zero resale value, and a remaining life of 5 years. It is capable of producing 2,000 units of X each year with yearly input of materials and labor costing \$1,500. Recently a new machine (asset B) has been introduced costing \$5,000 with an esti-

mated service life of 5 years which also produces 2,000 units of X per year, but at a yearly input cost of only \$1,000. (We ignore the effects of interest at the outset for the sake of simplicity.) It is clear that under definitions advanced previously, asset A is partially obsolete because:

- 1) If a firm owned neither asset, it would be willing to pay more for "B" than "A," but not more than a differential of \$2,500 (\$500 per year for five years).
- 2) As the firm already owns asset "A" it will not be replaced because the total savings of \$2,500 are less than the \$5,000 cost of replacing.

Existing accounting technique would not take cognizance of this state of obsolescence. We suggest that the carrying value of A be reduced to recognize its inferiority to B. The savings attributable to using B are \$2,500; its capital cost is \$5,000. The difference between these two, \$2,500, should be the new carrying value of A. To effect this write-down, an entry debiting correction of prior years' profit, loss due to obsolescence, or retained earnings, and crediting a valuation account, possibly called recognized obsolescence, should be made. (The credit could be made to the allowance for depreciation account, although we would prefer the use of a separate account for reasons explained later.) Subsequently, the annual depreciation entry would be a debit of \$500 to depreciation expense (assuming straight line depreciation) and a credit of \$500 to the allowance for depreciation account. (See Exhibit I next page.) The recognized obsolescence account would remain

<sup>19</sup> Maurice E. Peloubet, "Special Problems in Accounting for Capital Assets," *The Journal of Accountancy*, Vol. 61, No. 3, pp. 186-190.

<sup>20</sup> C. Emery Troxel, "Measurement of Obsolescence of Capital Goods," *Journal of Business*, Vol. XII, No. 2, pp. 132-151.

<sup>21</sup> Grant and Norton, *op. cit.*, p. 368.

<sup>22</sup> Wixson and Kell, *loc. cit.*, pp. 18-39.

## EXHIBIT I

PARTIAL INCOME STATEMENT OF THE YEAR SUBSEQUENT TO REPLACEMENT  
DECISION (INTEREST IGNORED)

	Retained Asset A		Asset "A" Replaced by Asset "B"		Retained Asset A	
	Existing Accounting Procedure		Existing Accounting Procedure		Proposed Accounting Procedure	
Revenue (2,000 units).....		\$3,500		\$3,500		\$3,500
Direct labor & materials.....	\$1,500		\$1,000		\$1,500	
Depreciation.....	1,000(1)	2,500	1,000(2)	2,000	500(3)	2,000
Operating Profit.....		<u>\$1,000</u>		<u>\$1,500</u>		<u>\$1,500</u>
(1) Book value of A.....	\$5,000					
Remaining life.....	5 years					
Annual depreciation charge.....	\$1,000					
(2) Book value of B.....	\$5,000					
Remaining life.....	5 years					
Annual depreciation charge.....	\$1,000					
(3) Book value of A.....	\$5,000					
less recognized obsolescence.....	2,500	\$2,500				
Remaining life.....	5 years					
Annual depreciation charge.....	\$ 500					

unchanged until retirement of the asset, assuming no further obsolescence.

If we assume a 6% rate of interest, the recognized obsolescence would be \$2,106<sup>23</sup> and the carrying value of A would be \$2,894 with a resultant yearly depreciation charge of \$578.80. (See Exhibit II.)

The mechanics of our proposal are as follows:

- 1) *Compute the value of the existing asset in relation to the new asset.*

A) Establish the discounted capital cost of the new asset for the remaining life of the *existing* asset. This cost can be found by subtracting from the original cost of the new asset the present worth (at an appropriate rate of interest) of the value of the new asset on the date of contemplated retirement of the existing asset. (This is necessary only when the new asset's life extends beyond the remaining life of the old asset. If, as in our examples, the useful lives are the same, then the capital cost is identical with the

acquisition cost of the new asset.)<sup>24</sup>

- B) Establish the present value of the advantages in either input, i.e. cost savings, or output, i.e. increased quantity or quality of product, or both, traceable to the new asset over the remaining life of the old asset.

- C) Subtract (B) from (A) to determine the carrying value of the existing asset.

- 2) *Write down the existing asset to the value calculated above.*

If the value calculated in (1) is less than the book value of the existing asset, a valuation account, recognized obsolescence, should be established for the difference.<sup>25</sup> The possibility occurs that as a result of this methodology, a write-

<sup>23</sup> \$2,106 is the present value at 6% of an annuity of \$500 (the yearly savings attributable to B) for five years.

<sup>24</sup> This will be discussed more fully in a subsequent article.

<sup>25</sup> A write-down would also be indicated if a new machine identical to the old but substantially cheaper appears, if the discounted capital cost of the challenger is less than the book value of the existing asset.

## EXHIBIT II

PARTIAL INCOME STATEMENT OF THE YEAR SUBSEQUENT TO REPLACEMENT  
DECISION—6% INTEREST

	Asset "A" Retained		Asset "A" Replaced by Asset "B"		Asset "A" Retained	
	Existing Accounting Procedure		Existing Accounting Procedure		Proposed Accounting Procedure	
Revenue (2,000 units).....		\$3,500		\$3,500		\$3,500.00
Direct labor & materials.....	\$1,500		\$1,000		\$1,500	
Depreciation.....	1,000(1)	2,500	1,000(2)	2,000	578.80(4)	2,078.80
Operating profit.....		\$1,000		\$1,500		\$1,421.20
Interest charge.....		—0—		300(3)		—0—
Net profit.....		\$1,000		\$1,200		\$1,421.20
(1) Book value of A.....		\$5,000	(3) \$5,000 (.06)			
Remaining life.....		5 years	This sum would only be reported in the statements as an interest charge under the assumption that the \$5,000 to purchase "B" was borrowed. Under any circumstance however there would be an implicit if not explicit interest charge in the replacement analysis.			
Annual depreciation charge.....		\$1,000				
(2) Book value of B.....		\$5,000	(4) Book value of A.....		\$5,000	
Remaining life.....		5 years	less recognized obsolescence.....		2,106	
Annual depreciation charge.....		\$1,000	Remaining life.....		5 years	
			Annual depreciation charge (\$2,894/5)		\$ 578.80	

up rather than a write-down would be indicated. This, however, raises the issues of appraisal write-ups which we will not consider at this time.

- 3) *Amortize the book value of the retained asset less recognized obsolescence over its remaining life.*

## DEFENSE OF THE PROPOSAL

The proposed procedure can be evaluated from four points of reference:

1. Are the resultant data superior to those conventionally reported?
2. Are the underlying notions consistent with the general body of accounting ideas?
3. Are the problems of measurement insurmountable?
4. Does the procedure raise problems for the public accountant?

*Superiority of data.*—"Business success, particularly in fields that involve large

capital investment, depends to a considerable extent on choosing the right time to make changes."<sup>36</sup> It would seem, therefore, that accounting should take great pains to report in as meaningful a manner as possible management's decision to make or not to make a change. Assume management correctly decides not to replace machine A in the example cited previously (see Exhibits I & II). In the year subsequent to this decision (assuming a 6% rate of interest), reported expenses will be \$2,500, consisting of \$1,500 prime costs and \$1,000 depreciation charge. If the output of 2,000 units is sold for \$3,500 the company will report income of \$1,000. On the other hand, if management incorrectly decides to replace machine A, it will report in the subsequent period operating expenses of

<sup>36</sup> George O. May, *Financial Accounting: A Distillation of Experience*, (New York: The Macmillan Co., 1943), p. 120.

\$2,000 (\$1,000 direct and \$1,000 depreciation), an interest charge of \$300, and income of \$1,200 (revenue and output are unchanged). Income supposedly measures the efficiency of the entity and its management.<sup>27</sup> Yet here we find the curious situation in which a wrong decision leads to larger reported income in subsequent periods under existing accounting conventions than would the correct decision. Under the proposed procedure, however, income in the subsequent year would be \$1,421.20 (\$3,500 revenue less \$1,500 prime costs and \$578.80 depreciation). The revised income would seem to be realistic. The income that can be maintained in future periods would be \$1,421. The increased income results from a reduction of capital employed and a different cost mix, i.e., less capital costs and more prime costs.

On the other hand, if analysis revealed that the asset should be replaced, existing accounting procedure might deter replacement due to the reluctance of management to incur the book loss due to abandonment. To the extent that business decisions on capital investment are influenced by the "timing" of losses due to abandonment or change, accounting impedes rather than serves the needs of management. To put this another way, if a necessary change is postponed because next year is a "better" time to absorb the charge, all parties (except the tax collector) are disserved. At the same time accounting has failed to communicate meaningful financial information of considerable importance. The loss or write-down in value of an asset should not be dependent upon replacement. A totally or partially obsolete asset has become totally or partially obsolete when the new, more efficient asset has become available. And under our proposal, obsolescence is recognized when analysis shows it to exist. Thus the "loss" due to obsolescence can neither be avoided nor postponed by non-replacement, and a

possible deterrent to correct action would be removed.<sup>28</sup>

It can also be argued that the balance sheet figure resulting from the accounting recognition of obsolescence would be more useful, since the restated carrying value is a better interim calculation of future service benefit. Clearly the diminution of the capital asset is attributable to the periods prior to the innovation rather than to subsequent periods.

*Consistency with accounting thought.*—The proposed recognition would not seem in any way contrary to accounting principles. Rather, it seems to parallel the practice of recognizing obsolescence in inventory, which has long been accepted as proper accounting.<sup>29</sup>

One possible objection to the downward revaluation of a capital asset is the possibility that fluctuations in value over the life of a non-current asset are probable, and that today's lower values might be succeeded by future higher ones. This objection does not appear to be valid in the case of write-downs due to obsolescence; it seems safe to maintain that effects due to obsolescence would rarely, if ever, be reversed.

Consider this from another angle; is this a departure from the cost concept?

If initial cost of a long life asset represents the discounted stream of expected future service, and amortization of cost is but an attempt to allocate cost equitably to the various periods of service, then our proposal is not a departure. We are recognizing an occurrence, subsequent to

<sup>27</sup> "The realized net income of an enterprise measures its effectiveness as an opera-unit . . ." American Accounting Association, *Accounting and Reporting Standards for Corporate Financial Statements*, (Columbus: American Accounting Association, 1957), p. 5.

<sup>28</sup> The interesting notion of the possibility of negative book value when a wrong choice to retain a totally obsolete asset is made will be discussed in a subsequent article.

<sup>29</sup> For practice, see American Institute of Certified Public Accountants, *op. cit.*, p. 56; for theory, see Wixon and Kell, *loc. cit.*, pp. 12-49.

acquisition, which, had it been known at acquisition, would have resulted in a shorter life estimate or a different depreciation method.<sup>30</sup>

*The problems of measurement.*—It is interesting to note that the origins of equipment analysis coincide with the first books on cost accounting.<sup>31</sup> We feel that had earlier accountants concerned themselves as deeply with the problems discussed here as they were concerned with the allocating of factory cost to inventory and cost of sales, present thinking might be significantly different.

The whole problem of allocation of capital asset costs to specific time periods, is, and has been, essentially an arbitrary and subjective one. In part, this is evidenced by the many acceptable depreciation methods and the continuing controversy over them.

The many problems of measurement such as the choice of the interest rate, the frequency of analysis, whether or not all fixed assets are periodically included, the reliability of data, the choice of method, etc., are relatively minor when viewed against the needs for information on this subject. We recognize that these measurements are being made daily by industrial engineers whether they be employees or consultants. Indeed, *Business Week* recently devoted several pages to the uses of equipment analysis;<sup>32</sup> and in recent years, many of the accounting texts have included this subject.<sup>33</sup>

Since there is a consensus that continuing equipment analysis is essential to enlightened management, we feel that the problem of measurement is primarily one of mechanics; and that this is a minor problem when balanced against the needs for information.

*Problems facing the public accountant.*—Given that partial obsolescence can be recognized in the accounts and that this is held to be within the structure of ac-

cepted procedure, what would be the problems facing the public accountant? At first glance, they appear to be the usual problems of reliability of data with the attendant problem of verification, a determination of consistency of method employed, and an approval of the amounts reported.

On the other hand, suppose that partial obsolescence is reported in the company's annual statements but that this is not considered to be acceptable procedure. Since the asset offset amount is to be reported separately, and since the charge to the year would also be stated separately, the accountant can disclaim these separate items if he feels that this is necessary.

One last problem: suppose that accounting for partial obsolescence is accepted procedure but a company makes no use of equipment analysis. In this instance the public accountant must determine if this omission is significant. If it is, then there is an omission of a material fact and qualified opinion is necessary.

### Conclusion

Accounting for obsolescence has traditionally been involved only with the estimation of service life. Accounting measurements of obsolescence, if any have been made, are presently included with periodic depreciation charges. But obsolescence, unlike "wear and tear" or "use, disuse, and abuse" may not be linear, rhythmic,

<sup>30</sup> The use of the new methods of accelerated amortization would have the effect of reducing the amounts involved in a write-down.

<sup>31</sup> *Factory Accounts* by Emile Garcke and J. M. Fells was published in London (Crosby Lockwood and Son) in 1887; the rudiments of equipment analysis first appeared in Wellington's classic, *The Economic Theory of Railway Location*, also published in 1887.

<sup>32</sup> "How to find the Moment when Modernizing Pays Best," *Business Week*, Number 1517, September 27, 1958, pp. 100-119.

<sup>33</sup> William J. Vatter, *Managerial Accounting*, (New York: Prentice-Hall, 1950), pp. 354-366; John J. W. Neuner, *Cost Accounting* (Homewood: Richard D. Irwin, Inc.), pp. 830-835. Robert N. Anthony, *Management Accounting* (Homewood: Richard D. Irwin, Inc.) Chapter 18.

or predictable. In good conscience, periodic depreciation charges should not include provisions for extraordinary obsolescence; this measurement can and should be made separately. Although this imposes an additional requirement on accountants, we can take some comfort in remembering that only fifty years ago we had no accounting for depreciation. Depreciation accounting developed because, despite the many problems and assumptions involved, account-

ing reports were judged more useful if they included the effects of depreciation. Ultimately, of course, any accounting procedure must be judged by the utility of the information it provides interested parties. As investment in capital assets becomes larger and the effects of changes in technology more pronounced, we feel that, despite the many problems involved, accounting must attempt to report the effects of obsolescence in an explicit manner.

# ACCOUNTING IN A FREE ECONOMY

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SINCE the beginning men have been engaged in producing things necessary for subsistence and have been confronted with the problem as to what things to produce and how to produce them. As soon as several persons combined their efforts in production, there has been the problem as to what each should do and how the product should be distributed among them. The order or condition under which men decide and carry on their activities with reference to production and distribution characterizes an economy. An economy is said to be free when the members of a community, each according to his ability and situation, freely make decisions and carry on economic activities with little or no interference from the government.

In the early days of economic life, when each individual constituted a unit of economic activities by himself, there was no problem of distribution and his own choice of consumption determined the character of his production. Later, as the household became the economic unit, and still in a state of self-sufficiency, the consumption of the household determined its production; work was assigned and product was distributed among its members largely according to the wish of the head of the family. After a further period of development, the household economy was gradually broken up and in its place a social economy emerged.

In a social economy production is undertaken mostly by separately organized business enterprises which constitute the cells of the entire economic organism of society. Individuals take part in these business enterprises in various specialized capacities as landowners, workers, capital-

ists, and enterprisers supplying respectively land, labor, capital, and enterprise, the four basic factors of production. Production is no longer for the direct consumption of persons participating in each business enterprise, but for sale to consumers or to other business enterprises which in turn produce for final consumption. The underlying reason for this development is the efficiency resulting from specialization and cooperation. Men produce more and better things when they concentrate their effort on particular tasks and they can do so by cooperating with others in a business enterprise; and a business enterprise in turn gains efficiency by devoting itself to one kind of production and selling its product on the market rather than producing what its participants need for consumption. In other words, the present economy is a market economy in which production is disposed of in the market and it is the money realized from the sale of the product that is distributed among those participating in production rather than the product they themselves produce. With the money thus obtained each individual decides for himself what things he wants to buy for consumption. In these circumstances the problem of production becomes more complicated and some equitable basis of distribution has to be found.

While all productive factors cooperate in carrying on production in a business enterprise, it should not be inferred that the business enterprise comes into being through their joint initiative; rather, the initiative for its organization comes from the enterpriser who sees the possibility of success for a certain line and method of production and risks his money and effort

over it. The enterpriser plans and coordinates the work of production and engages the services of the other factors. The problem of production, therefore, is primarily one for the enterpriser who alone is responsible for the success of the business undertaking. As a matter of fact, not all the factors taking part in the business wait for the sale of its product to secure their share of production: each factor is generally paid remuneration according to a predetermined rate, except the enterpriser who gets what is left after the claims of other factors are met. There is always the possibility that the proceeds of sale will be insufficient to meet even the prior claims, in which case the enterpriser suffers a loss. Thus the position of the enterpriser seems a precarious one and that of the other factors more secure but subject to the whim of the employer. However, aside from personal aptitude and condition every individual is free to decide what part he wants to play in production; whether to be an enterpriser, start a business of his own and earn profit, or to take part as a land-owner, worker, or capitalist in the business of others and receive rent, wage, or interest. Moreover, as an enterpriser, every person is free to decide on his line and method of production; and as any of the other factors, every person is free to choose the specific business enterprise with which he wants to be associated.

#### *Economic Activities Guided by Prices*

In an economy in which every individual is free to do what he likes, without a set of rules to govern economic activities or a central agency to direct them, confusion would seem inevitable, with production out of gear with consumption and distribution largely on an arbitrary basis. One may indeed wonder, with various alternatives open to him, how is the enterpriser to know whether he should produce

one thing rather than another? What should be his method of production? Similarly, among the different business enterprises, how is the supplier of each of the other factors to decide whether he should join any particular enterprise rather than another? Decisions in this regard affect not only the interest of the individuals concerned, but also that of the society as a whole, because erroneous decisions would mean a waste of economic resources which could be devoted to more useful production, and social interest requires that all economic resources be used in such a manner as to yield the maximum economic well-being. In economic considerations every person is predominantly self-seeking and his economic activities are motivated by the prospect of maximum advantage to himself. Such being the case, what is the assurance that the decisions of individuals will be in line with the interest of society? What is the guide to decisions which will be beneficial to both individuals and society?

In a completely individualistic economy in which, it is assumed, production is for direct consumption, every individual with limited resources at his disposal, must apply them in the production of things essential to life in order of their relative importance so as to insure that nothing of greater importance will be sacrificed for something of lesser importance. He considers, that is, the various products to which his resources can be applied and sees that none of the resources which are needed for a more important product are used for a less important one. In other words, he compares each time the importance of his contemplated product with the importance of the resources in the production of an alternative product. A process of comparative evaluation is always going on. In the present economy in which all members of society cooperate in carrying on production, essentially the

same process of evaluation is in effect; only the evaluation is made more definite through an expression of value in money terms, that is, through price. Economic decisions and activities are now guided by price. There is a price for everything—every product as well as every factor used in production; and price is determined by demand and supply over the whole field. Hence it may be said that price represents social evaluation; and it tends to be set always at a point at which demand and supply are equalized. At this point maximum economic well-being is achieved, because factors will have flown into the production of various products according to their relative importance, and products will have been used for the satisfaction of various wants according to their relative urgency. Let us see how this works out in an economy composed of business enterprises.

Every business enterprise also takes price as the sole guide for its economic activities. Being self-seeking, each enterpriser chooses the line of production which yields him the highest profit, but profit results from the difference between the price that can be realized from his product and the price he has to pay for the services of the factors employed for production, in the form of rent, wages, and interest. In so far as price represents social evaluation, the enterpriser in making his calculation of revenue and cost is in effect also comparing the social value of his product and the social value of the factors necessary for its production. The price of each factor indicates its social value in other lines of production, and unless the contemplated product will bring a price which is high enough to pay the cost of all the factors, the enterprise had better switch to another line of production. In addition, the method of production which the enterpriser adopts affects the proportion of factors to be employed—whether more

capital or labor is used, for instance—and this naturally influences his cost also, and attempt is generally made to improve the method of production so that cost may be reduced to a minimum. In this way the enterpriser will not only be improving his prospect of profit, but also acting in conformity to social need. It should be observed, further, that the price of each factor in the form of rent, wage, and interest, besides expressing its social importance in production, represents also the rate at which each factor shares in the product, and in so far as the rate is determined by the demand and supply of each factor over the whole field rather than in any specific business enterprise, it is based on social decision. The owner of each factor will work for a business enterprise that pays this rate, or he will work for some other enterprise that does; while at the same time he cannot expect to receive more or he will not be employed.

In a free economy, therefore, price is the all powerful factor which guides economic decisions and activities as regards production and distribution. It has made possible the preservation of individual freedom on the one hand and of an orderly economic organism on the other. To be sure, it has not been possible to avoid the waste of resources altogether, but broadly speaking, the increase in production with general improvement in economic well-being has been noteworthy and no serious problem of distribution has been experienced.

#### *Business Competition and Economic Progress*

The foregoing outline of the operation of the free economy should not give one the impression that economic activities tend to settle down to a set pattern according to which business enterprises become established. On the contrary, demand and supply on the basis of which price is de-

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terminated are dynamic facts and are subject to change at all times. Population increases, human tastes change, substitutes are found, inventions and discoveries are made; these and other occurrences cause disturbance to the established relation of demand and supply, and as a result price is altered. An economy must be flexible enough to permit adjustments of its production to changed conditions of needs and resources so that the most effective utilization of resources may be constantly kept up. Business enterprises through which production is carried on must be able to adapt themselves quickly to changes in social evaluation; and as variations in prices of product and of productive factors invariably affect revenue and cost, they must be taken into account by business enterprisers in determining their future course of production. Further, development in industrial art brings new techniques of production, by which productive factors can be employed more effectively; and as a result more abundant supply is made possible at lower unit cost. Gradually price is lowered and more demand is satisfied. Business enterprises which are quick in adopting new industrial techniques are benefited by reduced cost while those that lag behind are confronted with the possibility of loss.

One characteristic fact of the free economy is that there is no restriction as to the kind of business which an individual may enter, or the manner in which the business may be conducted; both are left completely to individual initiative. In general, therefore, a large number of business enterprises are engaged in the same line of production, and there is no effective agreement possible among them as to how much each should produce to satisfy the total demand. Moreover, new enterprises keep on coming into the field. This complicates the calculation for each of them, especially in view of the fact that in

a modern enterprise with large overhead costs, cost per unit of product varies considerably with volume of production. What actually happens in the business world is that every enterprise tries to increase its production and capture as much of the market as possible, and this means competition. Competition is as old as business history. But when market was limited in scope and production was simple, supply could be easily adjusted to demand. In the modern economy, however, with improved transportation, the market has been considerably enlarged, and with increased use of machinery production has been greatly increased in scale, with the result that production in many lines is for world demand. Competition has become keener and many-sided, and forecast of demand has become more difficult. Of course competition is not necessarily carried on blindly; there are statistics inside and outside each business enterprise which can be used as references for making forecasts and decisions. However, no business acts on statistics alone nor is it satisfied with past achievements; it forever wants to push ahead even in the face of uncertainties.

From the standpoint of the community, economic progress, like progress along other lines in human life, is hastened in an environment of uncertainty and change. In a dynamic economy every business enterprise has to keep up its struggle for existence; not only does it adapt itself to changes, but it also initiates changes wherever possible so as to bring itself to the fore in the company of its competitors. Will it ever make a mistake? Doesn't a mistake by any business enterprise mean a loss of resources? How about over-production? These are all possibilities in a free economy, but progress is made only through trial and error, and through the survival of the fittest. In fact, many of the conveniences and luxuries of life enjoyed

today would have been largely impossible had it not been for the foresight and indomitable spirit of the business enterprisers. The gain in quantity and variety of production has been so great that the loss of resources due to error and adaptation has proved to be but a small price to pay.

#### *Accounting and Business Management*

Obviously, in an economy in which business enterprises enjoy complete freedom of initiative and competition, decisions made by individual enterprisers with regard to the nature, method, and quantity of production have a direct effect on the soundness and progress of the economy as a whole. Rational decisions will guide production into socially desirable channels, promote efficiency, and prevent waste of resources. From the standpoint of each business enterprise, the making of these decisions and of efforts for their implementation constitutes the problem of management. The management of a modern business enterprise, with its complex operations and extended market, is no longer by rule of thumb but requires ability and experience of high order. In addition, adequate information concerning the general economic condition and what is going on inside the enterprise itself must be available so that sound judgments may be formed. In this connection government research and publications are helpful, but every enterprise must know specifically the result of its past production and the condition of its present resources in order to decide rationally on the line of action to be taken with reference to the general economic climate.

This latter information is supplied by accounting records, which are built essentially on price data, as price constitutes the all-important guide to production in every business enterprise. With production understood in the economic sense as in-

cluding all efforts made in making the product available to the purchaser, determination as to whether the result of production justifies the efforts made has to be based on the price realized from the product as compared with the price paid for the various resources or factors used in production, including both manufacturing and selling. In accounting the former is shown by the record of revenue and the latter by the record of cost or expense. Actually, with accounting on a periodic basis, the revenue and cost of any one period may not coincide with the production started during the same period due to the presence of inventories. So revenue and cost of a period show only the result of fully consummated production. The condition of resources available for further production is expressed by the record of assets, representing the price paid for the resources. The counterpart of the record of assets is the record of equities, showing the source of capital invested in the assets and coincidentally the legal claims of the various capital furnishers. Revenue and cost represent the dynamic picture of the economy of a business enterprise—what has taken place in the consummated act of production, while assets and equity show the static picture—what its present condition is during each stage of the act of production.

Profit-making being the primary purpose of every business enterprise, good management consists of putting all available resources into the line of production that promises the maximum revenue and involves the minimum cost, and at the same time obtaining the highest possible efficiency in the process of production with a view to reducing cost wherever feasible. To this end, production is planned ahead and all productive activities are coordinated and controlled. The most useful contribution of accounting in this connection is the analysis of revenue and cost in

such appropriate form and detail as will facilitate comparisons and provide bases for sound conclusions. One important form of analysis for managerial purpose is that of revenue and cost by each kind of product as a basis for determining whether a specific type of production is worthwhile. Further, as a means of encouraging efficiency and economy in production, cost is analyzed by departments, processes, and operations to facilitate control and to make possible comparison with past results or comparison with budget and cost standards which have become, of late, important instruments of management. In the analysis of cost, however, the accountant is confronted with a number of complex problems, because certain costs known as overhead do not lend themselves easily to such analysis, and he has to use judgment as to how far the analysis can be carried with accuracy and where attempts at the apportionment of overhead can safely be made. It should be pointed out also that while in economic analysis cost of production includes compensation of all factors, cost as used in accounting comprises only the compensation for the *acquired* factors but not compensation for the capital and enterprise factors furnished by the creditors and owners of the particular business enterprise. That is to say, interest and profit of the producing enterprise are not considered as cost of production but rather are represented by the margin between revenue and cost in the restricted sense. So in making comparisons the cost as disclosed by the accounts must be used with this fact in mind. The reason for the accountant's narrow conception of cost lies in the fact that in keeping accounts and interpreting transactions the accountant follows the point of view of the person responsible for the management of a business enterprise who makes use of the capital entrusted to him, in whatever manner the capital may be obtained.

In emphasizing the importance of analysis of revenue and cost for purpose of management, however, we should not lose sight of the importance of assets and equities. Assets in the form of materials, plant, and machinery as well as liquid funds represent production potentialities which must as far as possible be fully utilized, and their variety and proportion are matters of no little concern for purposes of planning and control. Record of assets is needed not only for ascertaining their sufficiency but also for insuring their safe custody and for control of production cost. From the economic angle, in so far as assets of a business enterprise consist of products of other concerns, they represent congealed and accumulated cost of productive factors—land, labor, capital, and enterprise of the previous producers, to which the cost of factors employed by the present producer is added. Equities represent the claims of capital furnishers, of which there are two more or less distinct groups, liabilities and proprietorship. Liabilities are the claims of creditors or the lenders of capital and constitute the interests of pure capitalists. Proprietorship consists of the claims of owners or the investors of capital and comprises the interests of typical enterprisers. Within each of these two groups of equities, claims may further vary in scope and urgency, and accurate record must be maintained so that appropriate and prompt action may be taken to meet them accordingly. Further, sound management also requires that assets be acquired with due regard to the status of equities in order to insure that the enterprise will remain in a solvent condition. This means, for example, that durable assets should as far as possible be acquired out of the enterpriser's capital and only in case of an enterprise with relatively stable income may such assets be bought in part through long-term debt, but they should never be financed through

short-term borrowing. While the problem of solvency concerns primarily the specific business enterprise, it may also be of great importance from the standpoint of general economic stability.

#### *Accounting and Economic Productivity*

From the foregoing discussion it is evident that while accounting is purely an instrument of management of individual business enterprise, it has a definite contribution to make to the entire economy in that it helps to direct economic resources into the most important line of production and that it tends to increase production efficiency and lower cost. In addition, accounting helps to increase productivity by making large-scale production possible. During the past century there has been steady growth in the size of business enterprises, and the growth has been brought about largely through the development of the corporate form of business organization. The corporation has made an enormous contribution to economic progress by its large aggregation of capital, increased specialization of production, and more effective use of resources. However, the development of the corporation has been materially aided by accounting, which has helped in solving two of its fundamental problems: namely, the maintenance of an equitable relationship among its various classes of creditors and investors on the one hand, and of a satisfactory relationship between the investors and the management on the other. In order to attract capital from as wide a circle of people as possible, a corporation generally issues various classes of stocks and bonds, each carrying different rights as regards income, security, and control. It is the duty of the accountant not only to keep a detailed record for each class and individual equity, but also to give correct interpretation to terms of agreements and take prompt action relating thereto, and in particular he

must be careful in his interpretation of transactions affecting the determination of income so as not to prejudice the interest of any class of equity. Further, in a corporate enterprise, although ownership resides in the stockholders, active management is usually delegated to a hired manager who has little or no ownership interest in the corporation. The manager in turn employs his hierarchy of assistants for various lines of duty, and they together constitute the body of management. This form of delegated management has become increasingly popular because the stockholders, especially those in a large corporation, are not in a position to participate directly in management, and because the management of a modern corporate enterprise requires such a high degree of competence that only persons with adequate training and experience can qualify for the task. But absentee ownership not only increases the importance of accounting as a basis for the management to render complete reports of stewardship to the owners, but also brings out sharply the sanctity of accounting procedures so that all data produced by the accounts may be fully auditable as a means of discharging trusteeship responsibility.

At present, moreover, business enterprise makes considerable use of bank credit in financing its short-term requirements, and this avoids the tying up of its own capital for temporary uses—a procedure that tends to increase the productivity of capital in the whole economy. In order that credit may be facilitated, accurate accounting and reporting of financial condition and earning power become necessary.

In another significant way accounting helps economic productivity by directing the flow of capital into more urgent and more efficient production. This is done through the publicity of production results of corporate enterprises over the

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security exchange. Consistent good earning reports presumably indicate that the production of certain corporations is serving a rising demand or that their production method is relatively more efficient, or both. On the other hand, consistently declining incomes suggest that production of certain corporations is faced with a falling demand or that there is inefficiency, or both. Thus investors are enabled by such information to make a more intelligent selection of enterprises for investment, and capital is thereby made to flow into the fields which promise the highest productivity.

#### *Accounting as a Basis of Distribution*

While the primary aim of revenue and cost accounting is to express the result of production, its importance as a basis of distribution also deserves emphasis. Off-hand, it may seem that in so far as the economic factors used in production are paid compensation according to rates fixed by the market, there is no problem of distribution involved in each specific business enterprise except the compensation for the enterpriser which is paid out of the margin between revenue and cost, or net income. In practical situations, however, the compensation of many economic factors employed by an enterprise is conditioned, in whole or in part, upon the result of production as indicated by its income. Even for the factor of enterprise, except in unincorporated enterprises in which ownership interests are generally homogeneous and permanent, the amount of income as determined periodically is a matter of considerable importance from the standpoint of distribution.

The fact is that in determining periodic revenue and applicable cost in a modern business enterprise, a great many technical considerations are involved and careful analysis of facts and rational judgment are necessary. In a going enterprise, for

example, production facilities are acquired for continued use for many accounting periods and large inventories of materials and supplies are kept to insure continuous operation; and their costs have to be assigned to the respective periods during which they render services. Further, in calculating cost applicable to each line of production during each period, there is the problem of allocation of overhead, and where sales do not coincide with production started during the same period, it becomes necessary to determine the portion of production cost applicable to the revenue of the period. Besides, in accounting for costs of current services it is often necessary to accrue certain costs and defer others, and similarly in accounting for revenue, questions of accruals and deferments are also frequently involved. All these considerations are needed to insure that revenue and cost of each period may be correctly stated. Obviously, in the exercise of personal judgment, errors of interpretation can not be completely ruled out. The fact that errors will rectify themselves in the long run will not insure equity in distribution in so far as the rights of the claimants vary from period to period. The accountant owes a duty in this connection to all those who share in the result of production on the basis of the income as determined by him. To him, objectivity and consistency constitute the two essential factors for guidance.

Of course the economic factor whose share of distribution is most commonly affected by the result of production is the enterprise factor, because ownership represents the residual interest and its compensation, including both implicit interest on capital investment as well as profit for risk-taking, is contingent on income being earned. Where ownership is relatively permanent, the effect of an understatement of income on the amount of distribution during any one period may be offset by an

overstatement during some other period. However, as far as the stockholders of a corporation are concerned, they seldom represent permanent equities but frequently change through transfers of stock. It is true that the income of a corporation constitutes only the basis of declaration of dividends and does not indicate exactly the amount of dividend to be paid. Nevertheless, income earned and reported produces an important influence on the decision of stockholders with respect to their holdings. Further, certain stocks carry a right to corporate income only as it is earned during each period and the right lapses if no income is reported, as in the case of noncumulative preferred stock. Under such conditions, the accurate determination of periodic income becomes a matter of crucial importance. Contractual equities such as corporate bonds generally carry interest at a definite rate which must be paid whatever be the amount of income, but income bonds, interest on which is contingent on income earned, will suffer loss in case income is insufficient. For the labor factor, although salaries and wages are generally fixed by terms of employment, especially for the lower rank employees, there are not infrequently systems of compensation in force which are in part based on the amount of periodic income, such as profit-sharing or bonus plans. In view of the possibility of periodic change of employment, accurate determination of periodic income again assumes considerable importance from the standpoint of distribution. Land rent, while in the nature of a surplus according to economic theory, is seldom paid in proportion to the income of a specific business enterprise. However, it is not impossible for rent to be paid on the basis of revenue received or volume of business done; there are instances in which tenants on agriculture land agree to pay to the landlord a certain portion of annual produce. In business practice, royalties on

mineral land are sometimes calculated on a periodic revenue basis.

### *Accounting and Social Cooperation*

Finally, consideration of the significance of accounting in a free economy seems incomplete without some evaluation of its contribution to social cooperation. An outstanding characteristic of a free economy is free initiative, but initiative on the part of business enterprise is induced primarily by the prospect of economic gain. Not all activities calculated to advance human well-being, however, carry such prospect or should be made the object of economic gain. There are activities which can not be sustained by pure economic considerations but which are very essential to human life and progress, such as those relating to security, education, social welfare, etc. These in general represent governmental functions which are carried on in a democracy through elected representatives; we can therefore think of government as a form of cooperation to undertake all measures for collective well-being. A government does not render its service for a price but depends on public contribution in the form of taxes, the most important of which are taxes on income and profit. While income and profit taxes are not levied according to services received by each business enterprise or individual, they are nevertheless contributions to support activities of social cooperation in spite of the fact that contributions are largely involuntary as far as each taxpayer is concerned. Equally important as the question of equity of tax legislation is the question of equity of specific tax assessment; accounting obviously has a significant contribution to make in this connection. At the same time, the government in collecting taxes and spending the money for various activities, acts in a fiduciary capacity; complete accounting is essential for the government to render its report of

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stewardship to the people. Only thus can a democratic government be assured of continued support by the people and can the people maintain suitable control over the activities of the government. This is true, fundamentally, of all forms of civic organizations as well as private institutions, which carry on work for cooperative welfare.

Further, in the field of business, there are certain classes of enterprises which carry on economic production of a special character and require governmental regulation. These include such enterprises as water, electricity, gas, and other companies which are essentially monopolistic and whose rates and standards of service closely affect the interest of the public. In some countries or communities, these services are undertaken by the government, but more usually they are operated by private enterprises subject to governmental regulation. These enterprises are known as public utilities and regulation is justified on the ground of their public character. In other words, they are more or less cooperative undertakings with private investment and operation, to insure operating efficiency. But they are not to be used as sheer objects of private gain, and in order that a fair return may be earned on private investment while a good standard

of service is maintained at reasonable rates, accurate accounting must be kept of investment, revenue, and cost as bases for determining whether the interests of the investors and of the public are both adequately protected.

In an important sense, moreover, accounting contributes to cooperation by increasing industrial solidarity. One of the chief problems of industrialization is the growth of a feeling of cleavage between employers and employees and an ever-present possibility of misunderstanding over questions of compensation, hours of work, and other related matters. As a result, interruption of production is often precipitated with loss to all concerned. Usually misunderstanding arises from failure on the part of employees to appreciate the real condition of the business enterprise. Consequently, in many industrial establishments today an attempt has been made to secure the representation of employees on management committees and to supply their representatives with accounting reports so that they may understand the financial position of their enterprise. This is clearly an effective way of eliminating much of the suspicion between labor and management and a step in the direction of establishing a firm basis for genuine cooperation.

# THE TWO FACES OF ACCOUNTING

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**A**CCOUNTING deals with the transactions and events involving a specific economic entity. This economic entity is of concern, in different ways, to its management, its stockholders (or other owners), its long and short-term creditors, its employees, and various regulatory and taxing bodies. All except the regulatory and taxing bodies (and, in a policy-making sense, even they) are more concerned with the *future* of the entity than with its past. The past is important as it affects specific obligations (such as liability for income taxes), but is primarily important as it foreshadows the future.

The accountant, who functions as a liaison between the entity and these groups, must thus stand, like the Roman god Janus, looking two ways at once. He must (1) report the past, and he must (2) interpret the past so as to throw light on the future. The basic question before us, in this article, is can he both report the past and interpret it at the same time?

To even understand our basic question, we must first explore some related topics. What is the entity? What is the nature of its relationship to management, stockholders, creditors, employees, etc.? What does the accountant now report on the past, and in what manner?

## REALITY OF THE ECONOMIC ENTITY

Is there, for practical purposes, such a thing as the economic entity? Or is it merely an accounting fiction, a handy representation, adopted only because of its convenience?<sup>1</sup> In strict logic, we cannot prove its reality. But in strict logic, we cannot even prove our own. Instead, we say with the philosopher, "I am because I am."

An economic entity is basically an economic relationship among persons. The literal-minded may say that a relationship cannot give rise to "something that has a real and separate existence."<sup>2</sup> We can only reason here by analogy.

Does a family exist? Does your family exist? I think so. Mine does. Does a large accounting firm exist, in a sense other than being merely a fictitious representation? Or even a smaller firm? I think it does. Mine does. Yet an accounting firm is only a relationship among persons. Is there really such a thing as a lathe? Or is a lathe just an assembly of parts? Ask any machinist.

Somehow, in the family or in the accounting firm or with the lathe, the whole is greater than the sum of the parts. That this is so is indicated by the fact that any of the individual parts can be, and in time will be, changed or replaced, and yet the family or the firm or the lathe will go on without interruption and without abrupt change in basic characteristics.

No, I think we can make a case for the statement that the entity is real, is something greater than merely the sum of its parts. It is the combination of the parts in such a manner as to give the parts purpose and meaning, and thereby it transforms the parts and makes them components of a whole. As Peter Drucker says, "A product can only be made if the operations and motions of a great many individuals are put together and integrated into a pattern. *It is this pattern that is ac-*

<sup>1</sup> For a history of the possible evolution of the concept of accounting entity, see Littleton, *Accounting Evolution to 1900*, especially page 26.

<sup>2</sup> Definition of "entity," *Thorndike Barnhart Comprehensive Desk Dictionary*, 1954.

usually productive, not the individual."<sup>3</sup> This "pattern" is the "thing" we mean when we speak of an economic entity. It is, because our own experience recognizes it as existing; just as we are, because our own experience recognizes us as existing.<sup>4</sup>

#### NATURE OF THE ECONOMIC ENTITY

An *economic entity*, then, is an aggregate of assets, directed by human intelligence and effort, committed to, and engaged in, an economic undertaking. By *assets* we mean property and rights in property, whether real or personal, tangible or intangible. *Economic activity* is carried on through the medium of *transactions*, which are exchanges of goods and/or services for a consideration. By an *economic undertaking*, we mean the application of assets, in combination with human intelligence and effort, towards the consummation of transactions that are related in terms of contributing to a common objective.

Accounting, in turn, "is the art of recording, classifying and summarizing in a significant manner and in terms of money, transactions and events which are, in part at least, of a financial character, and interpreting the results thereof."<sup>5</sup> Accounting must obviously be done from the viewpoint of the economic entity involved in the transactions. It must deal with the transactions, or with the events (such as a fire and its resultant loss), involving the economic entity.

Since the entity's nature is that it is a pattern of relationships (of assets to assets, of assets to sources of assets, of assets to claims against assets, of assets to people, of people to people, etc.) the entity exists, as a specific entity, only as a going concern. When it ceases to be a going concern, there is such a radical change in the pattern that it no longer is the same entity. The fact that the entity exists, means by definition that there is an objective. But the ABC Co. in liquidation is an entirely different pattern of relationships, based on

a different objective, than is the ABC Co. which is still oriented to the manufacture and distribution of widgets.

#### ENTITY TRANSACTIONS

The transactions of an entity have significance, basically, as they relate to the changes they create in the pattern of the entity. These relationships are not, so far as the entity itself is concerned, value relationships. The assets of an entity are of "value" to the entity only in use, only to the extent that they contribute to its objectives. Their value to the entity is determined at the time they make their contribution. To the extent they have not yet made their contribution, the entity itself has no need for setting a valuation on them.

What the entity does have is a need for some technique that can be used for keeping track of the complex relationships that are its essence. To do this job, it uses money as a symbol ("in terms of money"). Money is a symbol of the consideration involved in a particular transaction.

Thus, if the entity engages in a transaction in which it trades an old truck (carried in money symbolism on the books at \$500) plus \$1300 in cash for a new truck, to the entity the new truck is now symbolized by \$1800. As portions of the truck's useful life are used up, portions of the symbolic \$1800 will be removed from the asset account. It matters not to the entity that the exchange value of the truck may be more or less than \$1800. Its exchange value will be determined for the entity as the portions of the truck produce revenue in the process of being used up.<sup>6</sup>

Recording of transactions in terms of

<sup>3</sup> Peter F. Drucker, *The New Society*, 1950, p. 22.

<sup>4</sup> But for a contrary point of view on the reality of the entity, see Paton and Paton, *Corporation Accounts & Statements*, 1955, pp. 2, 3 and 6.

<sup>5</sup> AICPA, *Research Bulletin No. 9*, May, 1941, p. 67.

<sup>6</sup> But the question may aptly be raised regarding current assets as to whether their exchange value and their money symbolism are not, or should not be, the same?

money is, then, a convention of symbolic representation, and not basically a valuation method at all. The monetary convention is a logical, but not necessarily inevitable, method of solving the problem of trying to keep track of relationships which are fundamentally not homogeneous, in an objective and understandable manner. It is a by-product of the existence of the entity as a going concern. And thus only where the objective of the entity is liquidation must the symbolic representation logically be in terms of realizable value.

A transaction, we said, is an exchange of goods or services for a consideration. Stockholders in a corporation exchange current purchasing power for a right to receive possible distributions of future purchasing power, and for the right to exercise a certain degree of control over the entity. Other investors similarly exchange current purchasing power for possible future purchasing power (interest and principal), and often for a certain degree of control (see the many provisions of the average long-term loan agreement or bond indenture). Employees give their services in exchange for current purchasing power (plus, sometimes, possible future purchasing power). Suppliers give materials and equipment in exchange for current purchasing power. Customers give current purchasing power in exchange for merchandise and/or services. These are all transactions—the exchange of goods or services for a consideration.

Thus, in an undertaking of any size or complexity, the entity is not, as we so often seem to assume, merely an "agent" for the stockholders. From the transaction viewpoint, on the contrary, no one "owns" an economic entity. Instead of owners, there are various sources of entity assets, there are various persons who are party to different types of related transactions with the entity.

The transactions of the entity can be

divided into two main categories: (1) Those transactions directly or indirectly connected with the incurring of costs; and (2) transactions with, directly or indirectly, the consumers of the entity's goods or services.

*Costs* are the money expression of the consideration given for goods or services. Thus, the entity acquires assets from stockholders and creditors in order that it may exchange those assets for goods or services (*costs*). Some of these costs are applicable to current operations, such as most of wages paid, while some are at least partially applicable to future operations, such as equipment purchased.

In the transactions with consumers, the entity is exchanging the goods or services produced as a result of using costs up, for a consideration. If the costs used up exceed the consideration, the entity will find its assets decreasing. In time, if the situation continues, the entity will find impaired its ability to produce goods or render services for consumers.

The focus of the entity must, therefore, be on the transactions with the consumers—not on the relationship of the entity to any of the various parties which comprise its essence. They are of the essence of the entity, but the consumer is the entity's purpose, just as musk is the essence of many perfumes, but illusion is their purpose.

#### MANAGEMENT AND THE ENTITY

Since there is no real owner of the economic entity, but instead an entity itself, which maintains relationships with various (and usually conflicting) groups, the responsibility of management (which is the entity's governing group) must be not to any one of these groups but to the entity itself. This is in the long-run best interests of all of the groups. Since the entity's focus, the economic reason for its existence, is to render goods or services to consumers,

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this must also be management's focus.

The responsibilities of management are, therefore, two in number: (1) To maintain the economic strength of the entity so that it may continue to function into the indefinite future, and (2) to maximize its ability to produce goods or render services (i.e., to fulfill the entity's purpose in even existing). These are not responsibilities of management to the stockholders, nor to creditors, nor to its employees, nor to society as a whole. They are management's responsibilities to the entity.

In discharging these two related responsibilities, management must take into account the realities of the groups through which and by which alone it can function. The entity must have sources of equity capital, and so stockholders become a factor. The entity must have debt capital, and thus creditors enter. Without assets, in other words, the entity, by definition, cannot exist. These assets must originate outside of the entity itself, and therefore must be obtained in transactions between the entity and outsiders.

Management itself cannot utilize assets. It can plan their utilization, coordinate their utilization, control their utilization. But management can only plan, coordinate, and control the utilization of assets by people. Without the people, the entity cannot perform its function. Without the facilities of the entity, in our complex economy, the people (including management itself) are unable to function. A financial vice-president, for example, cannot function without an entity for which to obtain assets and for which to plan their utilization.

Government, stockholders, creditors, and workers (including management itself) all represent claimants to the assets flowing through the entity. Part of management's job is to see that none of these groups get more than is necessary to allow the entity to serve the consumer (i.e., to

fulfill its function). (Since management is one of the claimants to the assets, this creates a premium on integrity in management.)

From another standpoint, all these claimants represent costs. Since, at any given moment, there will be a limit on the aggregate costs which the entity can sustain, the interests of these groups will usually appear conflicting—and probably are, in fact, conflicting in the short run. And we all live in the short run. But they all have one interest in common. They are, consciously or not, and in varying degrees it is true, as involved in the long-run economic health of the entity as is management itself. Part of management's, not the accountant's, job is to convey to management's "partners" the mutuality of their interests, in meaningful terms.

#### ACCOUNTING AND THE ENTITY

The accountant can function in at least two ways relative to the entity:

1. He can provide objective entity data. The parties whose relationships make up the essence of the entity must have, in order to make decisions or plans involving the entity, basic entity data on which they can rely and from which they can proceed, with supplementary data, in making whatever interpretations they need.

2. He can be an interpreter. The parties involved with the entity may need expert assistance in interpreting the entity data and supplementary information in the light of their individual needs. Management, for instance, needs to think in terms of the long-term economic position of the entity, taking into account replacement costs of plant and equipment, competitive position, etc. This need of management's has helped create the modern concept of controller-ship. Short-term creditors are interested in the entity's ability to generate cash, etc.

The accountant is the expert in the field of symbolic presentation of the results of

entity transactions. As such, he has so far done a good job of keeping separate the functions of reporting and interpreting, even though he has not always clearly distinguished between the two nor understood why they must be separate. He has, from time to time, tended towards absorbing the function of decision. He does this, unconsciously and easily, by passing on those facts which he thinks important and burying those which are unimportant. This is as much interpretation as writing three paragraphs appraising management's performance, or stating that the company is earning a satisfactory rate of return on its total assets. He can also accomplish the same result in reporting by shifting from the entity viewpoint reflected in the accounting records to the viewpoint of one of the groups involved in the entity—usually the stockholders. And he can, although this is rarer, actually inject interpretation into the auditor's report. Such slips are facilitated by the fog of confusion surrounding both accounting reports and the accountant's opinion on them.

A report is a description of something which has happened. The accounting reports summarize the effect, on the various relationships involved in the entity, of the transactions and events which have taken place. But to communicate a description, there must be a language. The language of accounting involves the use of money as a symbol. By contrast, the language of trade involves the use of money as a medium of exchange. In this difference between money as symbol and money as a medium of exchange lies a great source of confusion among accountants and non-accountants as to the meaning and usefulness of accounting reports.

#### REPORTING V. INTERPRETING

The interpretation of a report is different than the making of a report. The eyewitness *reports* that she saw the defendant

shoot the deceased. The district attorney *interprets* this report to the jury, and *recommends* a certain *decision*. Fortunately, the jury is presented with two opposing interpretations. Those dealing with the entity have no such built-in safeguard.

For a report to obtain credence among informed, intelligent persons, it must have certain characteristics. The person making the report should be capable of accurately reporting that which is reported on. Thus, we cannot obtain from a blind man a report of what he saw, though his report of what he heard may be of more value than an ordinary person's.

We must make sure that the person making the report is speaking a language which we understand. When he speaks Spanish, which we do not understand at all, we quickly realize the need for an interpreter. Sometimes we also need an interpreter in English, for although the words used may sound familiar to our ears, their meanings, at least as intended, may be foreign to our minds.

We want to know that our reporter has no personal interest in the matter. He cares not, in his reportorial self, what interpretation we make of his account. If he has a personal interest, we discount the veracity of his report accordingly. Thus, a newspaper which carries its editorial policy over into its news stories tends to create a scepticism among its discriminating readers, even though its personal interest in slanting the news is intellectual, or emotional, rather than financial.

The interpretation of a report, on the other hand, is an open field. Interpretation involves viewpoint. The witness presents her report. Both district attorney and defense attorney interpret the report, and from different viewpoints.

#### ACCOUNTANT'S REPORTS

These requirements of any report apply to an accounting report. (1) The person at-

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testing to the report must be capable of presenting a reliable report. This is why we have such a title as "Certified Public Accountant." (2) The person attesting to the report should have no personal interest in the matter. This is a major reason for the rules of professional conduct of the American Institute of CPA's. They handle the more obvious areas of personal interest, although they cannot cope with the emotional or intellectual quirks of the CPA, which can as fully affect his objectivity as they can affect a newspaper's. (3) Finally, the person attesting to the report should be speaking a language which is understandable to the person receiving both the report and the attestation.

In his "opinion" the independent accountant says, "the accompanying financial statements present fairly the financial position of the XYZ Co. at December 31, 1957, and the results of its operations for the year then ended, in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year." While addressed to either the stockholders, the directors or both, this is the accountant's opinion on the accounting reports of the entity itself. It is his opinion on the basic historical record made available to government, stockholders, creditors, and workers, and from which they will, each from his own point of view, presumably make interpretations related to the particular information they want.

#### ACCOUNTING PRINCIPLES

What are the "generally accepted accounting principles" which the accounting reports are prepared in accordance with? That phrase, says George O. May, "is widely used today in cases in which it is not appropriate because there is no source from which even a general idea of the principles adopted can be gained."<sup>7</sup> We don't even know what sense of the word "principle" is

being used. Many of us assume it means a basic rule or law inherent in the nature of the subject itself. But Mr. May, chairman of the committee which a quarter of a century ago adopted the phrase, seems to have consistently maintained that what the committee had in mind was "A general law or rule adopted or professed as a guide to action; a settled ground or basis of conduct or practice . . .," which is not nearly the same thing.<sup>8</sup>

Thus, many of us would say that "Cost" is a principle of accounting, derived from the nature of the entity and its characteristic as a going concern, combined with the use of money as a symbol and the need for preparing periodic reports. We would say that fifo inventory valuation is a procedure in which the cost principle is applied.

Therefore, if the phrase which is now "generally accepted accounting principles" is to have the meaning which Mr. May ascribes to it, it should be reworded to something like "generally accepted accounting procedures." This will not automatically make a list of such procedures available, but certainly the major procedures followed by a given entity could be made a part of all audit reports covering that entity. The search for principles could go on, but with the aim of being used as the touchstones against which the procedures of a given entity could ultimately be tested.

#### FINANCIAL POSITION

The accountant's opinion also refers to the statements being a "fair" presentation of the "financial position" of the company, determined in accordance with the aforesaid principles. This is explained by the AICPA as follows:<sup>9</sup> "The value of many items in financial statements cannot be

<sup>7</sup> Geo. O. May, *Journal of Accountancy*, January, 1958, p. 24.

<sup>8</sup> Geo. O. May, *Journal of Accountancy*, December, 1937, p. 423.

<sup>9</sup> AICPA, *40 Questions and Answers about Audit Reports*, p. 11.

measured exactly . . . no one can be in a position to state that a company's financial statements 'exactly present' financial position. . . ."

What, though, is "financial position"? In *A Dictionary for Accountants*, Kohler says that it is "The impression conveyed by presenting the assets and liabilities of an enterprise or other person in the form of a balance sheet." This is the implication in the use of the term by most writers, although Paton points out, ". . . there are many factors which have an important bearing upon both the immediate and long-run financial standing of an enterprise that are not represented in the position statement, however well prepared."<sup>10</sup> From that standpoint, financial position would appear to be related to the present value of the entity's future earning power, and this is probably the meaning of the term more closely approaching non-accountant usage. But to an accountant, "financial position" appears generally to merely mean the same thing as "balance sheet."

Since the normal "financial statements" on which an opinion is being expressed are the balance sheet and the income statement, and since "financial position" means merely "balance sheet," the literal sense of the accountant's opinion is: ". . . the accompanying balance sheet . . . fairly presents the balance sheet of the XYZ Co. . . ."

This becomes even less meaningful when the AICPA explains, "The value of many items in financial statements cannot be measured exactly. . . ." Presumably, in an explanation written for the layman, words can be assumed to be used in their common meaning. The pertinent possible common meanings of "value" are: "the real worth; proper price; power to buy; estimated worth." But this is not at all what we mean by "value" in accounting. We mean, basically, unexpired cost. In preparing entity accounting reports, there is no attempt made to determine "value" in any such

sense as the meanings quoted above. We are not, in reporting, trying to estimate value, measure it exactly, or do anything else with it.<sup>11</sup> It is only in interpreting accounting reports that value becomes a factor. And then "value" is conditioned in meaning by the specific point of view from which the interpretation is made.

#### SUGGESTED ACCOUNTANT'S OPINION

Perhaps our opinion paragraph could be reworded to something like the following, which is closer to what we think we are saying:

"The accompanying accounting statements fairly present the company's cash, its rights to cash, the unexpired costs of its other assets, and the sources of the assets, as of December 31, 1957; and the results of the transactions and other events involving the company for the year then ended; determined in accordance with generally accepted accounting practices within the company's industry, applied on a basis consistent with that of the preceding year."<sup>12</sup>

#### REPORTING AND INTERPRETING

The accounting statements are summarizations reflecting, from an entity viewpoint, the transactions and events that have transpired. They are not in themselves interpretations, although many accountants and more non-accountants contend that they should be. As to their not being interpretations, Gilman comments, "It is only when the task of interpreting

<sup>10</sup> Paton, *Essentials of Accounting*, 1949, pp. 784-785.

<sup>11</sup> But this is apparently not the view of some public accountants as witness the use of the phrase ". . . to more fairly reflect the economic truth of the operation of the corporation" in the opinion section of one auditor's report (p. 49, *Journal of Accountancy*, January, 1958); and the dual opinion used by one national accounting firm (Arthur Andersen & Co.) that the statements both present fairly the financial position and operating results and are prepared in accordance with generally accepted accounting principles (as to this latter, see Carman Blough's comment on page 74, *Journal of Accountancy*, March, 1958).

<sup>12</sup> The proposed wording reflects suggestions made by Professor Fred Bogart, University of Arizona.

accounting figures is faced that the convention of dollar valuation causes trouble. Such interpretation is always from the ownership, legal, or credit viewpoint, never from that of the entity. From the entity viewpoint, valuation offers no problem of 'diverse statistical orders.'<sup>13</sup> Not only does the entity have no need for valuation data, but the groups involved with the entity have need for such different types of valuation data that it is likely that statements prepared on a valuation basis satisfactory to one group's needs would not only be of doubtful usefulness to the other groups, but would be highly suspected by them.

Samuel J. Broad says, "It is not the accountant's task to prescribe the viewpoint from which the interested party looks at the financial statements. . . . The viewpoint is that of the reader and the purpose is to furnish him with information necessary for an intelligent understanding of the situation."<sup>14</sup> It would seem then that the first thing is to give the reader the basic entity information, from the viewpoint of the entity, in such a manner that he understands what he is getting and can thereby determine what additional information he wants in order to meet his own peculiar needs.

The accountant is quite justified in attempting to anticipate any such wanted information, and he is justified in providing such entity information as part of his audit report when he is willing to assume responsibility for its reliability. In providing such data in an audit report, he should avoid attempts at interpretation. It is important that the data be clear, pertinent, identified as to source, and their limitations spelled out. Entity data, otherwise available from no other source, are what we are talking about. Thus a conversion of sales for the past ten years into common dollars based on the entity's own price structure and sales mix would be includ-

ible, whereas statistics of the Bureau of Labor Statistics, generally available to anyone, would not be. Wages, prices paid for raw material, a presentation of equipment by acquisition date and depreciation status, data on the fair market value of inventories and on inventory pricing policies, comparison of performance with plans, all these bits of information, and many more, are pertinent to interpretation of the accounting reports and are normally not available elsewhere. By providing them, and vouching for their authenticity as data, the accountant does a real service. It is my opinion that he has a positive duty to provide such information. Perhaps a major problem of the future will be the devising of minimum standards for reporting such supplementary data.

This is not therefore a contention that the accountant has no place in interpretation. On the contrary, his over-all function is three-fold:

1. To provide an objectively determined historical record of the results of the transactions and events involving the entity, prepared from the point of view of the entity. This is not as simple as it may sound. First, the statements are, at least theoretically, prepared by management and not by the independent accountant. His function is to express an opinion as to their fairness of presentation. If the statements are actually to reflect an entity point of view only, then they must not reflect a management point of view. Management must do its interpretation of the entity data elsewhere. Secondly, there is a strong tradition in accounting to the effect that the statements embody the point of view of the stockholder.<sup>15</sup> The influence of the British company acts and their viewpoint of pro-

<sup>13</sup> S. Gilman, *Accounting Concepts of Profit*, 1939, p. 56.

<sup>14</sup> *Journal of Accountancy*, September, 1957, p. 37.

<sup>15</sup> E.g., footnote 1, page 1, *Accounting Concepts and Standards Underlying Corporate Financial Statements*, 1948 Revision, American Accounting Association.

tecting the stockholder on American auditing has apparently been substantial, in spite of the fact that the needs of this century are far different than the needs of 1844, and the needs of 1958 are even different than those of 1932. The stockholder is only one of the parties validly concerned with entity data, and the need is now at least as much information as protection.

2. To provide, without interpretation, all supplementary data which might reasonably be useful to any of the various parties making use of the accounting reports in their adaptation of the entity point-of-view embodied in the accounts to their own point of view. This is not as simple as it seems, either. The very process of determining which entity data might be useful in making interpretations involves selection and rejection, which are themselves a form of interpretation.

3. To assist in interpreting both entity data and any other available data from the point of view of any of the various parties involved.

If the accountant is to be accepted as independent, and his opinion on the basic accounting reports is actually to be accepted as relatively unimpeachable within its own framework, then this third function of interpretation must be separated from the related functions of reporting the effect of entity transactions and providing supplementary entity data. We must, in our reporting function, in effect voluntarily blind ourselves in order that our report of what we hear may obtain credence.

#### CONCLUSION

Accounting is concerned with economic entities. These entities actually have reality, in the sense that they are patterns which exist independently of their parts.

From the viewpoint of the entity, which is the viewpoint embodied in the accounts, accounting presents no questions of valuation, of worth. Money is only a symbol.

From the viewpoint of persons dealing with the entity, money is not a symbol only, but is a medium of exchange and a measure of worth.

From the viewpoint of the entity, accounting is historical only. The entity does not plan—it only acts. From the viewpoint of persons dealing with the entity, accounting data are most useful only as they throw light on the probable pattern of the future—and by each such person, both the present and the future are differently contemplated.

The accountant deals, therefore, with two aspects of accounting:

1. Reporting on the past;

2. Interpreting the past so as to throw light upon the future.

Reliance on the accountant's independence and objectivity in reporting on the past has played a substantial part in making possible our present complex industrial civilization, in spite of a serious degree of confusion (and, perhaps, disagreement) as to what accounting reports, and the accountant's opinion on their fairness, actually represent.

If the profession is to avoid losses of confidence on the part of the various interests making use of accounting reports, it would seem essential that greater clarity of meaning must be achieved in our communication—both to others and to ourselves. There is a constant temptation to any expert to censor the data he handles, or to so present it that its "correct" interpretation is obvious. The more esoteric his concepts, the greater the temptation. This temptation assails accountants from time to time, as does the related temptation to over-emphasize the significance of one's field.

The accounting statements of an entity, accompanied by the opinion of an independent public accountant, are not significant in themselves. They are significant only as they provide to the reader certain base data upon which the reader can rely. From

this base data, the reader can proceed, in conjunction with other data, in making the interpretations which relate to his own relationship or proposed relationship to the entity. In making such interpretations, the reader may well find it desirable to utilize the services of an accountant—as an interpreter, though, not a reporter.

Accounting reports are prepared from the point of view of the entity, although there are elements of both a managerial point of view and a stockholder point of view in the arrangement made of the data. There is, though, no such thing as interpreting accounting data from the point of view of the entity. To the extent that the entity has a point of view, it is embodied in the historical accounting record itself. The minute the point of view of stockholders, bondholders, creditors, employees, management, regulatory bodies, or any other person or group is substituted, the point of view of reporting is abandoned. Only one

viewpoint can be maintained at any given moment. To the extent maintained, it is maintained to the exclusion of the other points of view from which the entity may be interpreted. Only the entity point of view, because of its very limitations, can be maintained objectively.

Therefore, audit reports of independent public accountants, while they should offer data useful for interpretation, should refrain from engaging in interpretation. Effort should be devoted to making clear what the accounting reports actually present, and the meaning of the accountant's opinion on their fairness of presentation. Interpretation should be recognized as a clearly separate area and should concentrate on comparison of performance with plans, the impact of plans for the future on the future, and the impact of the past on the future. The Roman god Janus could look both ways at once. It is doubtful that accountants can.

## ASSOCIATE MEMBERSHIPS

FOR THE INFORMATION of teaching members of the American Accounting Association, the numbers of new Associate Memberships are reported by schools. These include all applications processed by our Secretary's Office during the period of August 25, 1958 through April 15, 1959 from schools with ten memberships or more.

### Over 100 Members

John Carroll University (349)  
LaSalle Extension University (187)  
University of Miami (159)

Indiana University (148)  
University of California at Los Angeles (146)

New York University (109)  
Temple University (108)

### 70-80 Members

Bentley School of Finance

City College of New York

University of Iowa

### 60-70 Members

Drake University  
Fairleigh Dickinson University

University of Illinois

University of North Carolina

### 50-60 Members

Mississippi State University

Pace College

### 40-50 Members

Michigan State University  
Pennsylvania Military College

San Jose State College  
University of Arkansas

University of Texas  
Western Reserve University

### 30-40 Members

Bryant College  
DePaul University  
Husson College  
Miami University

Mississippi Southern College  
University of Buffalo  
University of Cincinnati

University of Detroit  
University of Missouri  
University of Pittsburgh

### 20-30 Members

C. W. Post College  
Fort Hays Kansas State College  
Franklin & Marshall College  
Howard University  
Kansas State Teachers College  
Los Angeles State College  
Louisiana State College  
McGill University  
North Texas State College

Ohio State University  
Quincy College  
Rutgers University  
Seton Hall University  
University of Alabama  
University of California  
University of Denver  
University of Massachusetts  
University of Michigan

University of Minnesota  
University of North Dakota  
University of Puerto Rico  
University of South Dakota  
University of Utah  
University of Washington  
University of Wisconsin  
Villanova University  
Wayne University

### 10-20 Members

Alfred University  
Ashland College  
Bellarmine College  
Brooklyn College  
Canisius College  
Catawba College  
Clark University  
Columbia University  
Earlham University  
Everett Junior College  
Fenn College  
Florence State Teacher's College  
Florida State University  
George Washington University  
Howard F. Green School of Accounting

Indiana State Teachers College  
International Accounting Society  
Iona College  
Kansas City Junior College  
LaSalle College  
Long Island University  
Louisiana State University in New Orleans  
Loyola University  
Morris Harvey College  
Northeastern University  
Northwestern University  
Pennsylvania State University  
Sacramento State College  
St. Mary's University  
St. Norbert College

San Diego State College  
Southern Methodist University  
Southwest Missouri State College  
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# THE TEACHERS' CLINIC

GLEN G. YANKEE

EDITOR'S NOTE: This section of THE ACCOUNTING REVIEW is devoted to matters of particular interest to accounting instructors. The contribution of articles bearing on the nature and purpose of various types of accounting education, or dealing with techniques of accounting instruction, is invited. Address all correspondence to Glen G. Yankee, School of Business Administration, Miami University, Oxford, Ohio.

## AN INTRODUCTORY COURSE IN THE FIELD OF ELECTRONIC DATA PROCESSING

JAMES D. J. HOLMES

*University of Mississippi*

The University of Mississippi is extremely fortunate in having a computer installation comprised of the IBM 650 and auxiliary equipment. A course in electronic data processing was established in the School of Commerce and Business Administration in February, 1959.<sup>1</sup> The course is entitled Business Data Processing, and carries three semester hours credit. It is being offered at the junior level to any student having a minimum of nine hours of accounting. Since the majority of students in the School are required to take nine hours of accounting, no particular major field of study is precluded from participation in the course.

For the first offering of this course an attempt was made (with considerable success) to have as many major fields represented as possible. In this first offering the number of students enrolling in the course was purposely restricted so that emphasis could be placed more upon proper development of the course than upon working with students. Demand for this first offering far exceeded the restrictions that were established. It is expected that demand will be greater in September, 1959, when the course will be offered for the second time.

Returning to the course itself, the title Business Data Processing was chosen because the course covers manual and punched card data processing as well as EDP. Therefore, it was felt that any refer-

ence to electronics in the course title could be misleading. Based on the assumption that not only accounting but other fields would be represented in the student enrollment, it appeared that the introductory portion of the course should be similar to the systems course required of all accounting majors. It is believed that the student will have a better background for the computer portion of the course if he has first been grounded in manual and punched card systems. Also, it will insure that all students will be exposed to an equal amount of material regarding manual and punched card systems. Therefore, in the first phase of the course, the student will be introduced to general methods of manual processing of business paper.

In the second phase of the course the student is introduced to punched card methods of processing data. There is some discussion of various types of punched card equipment, but there is no emphasis placed on the technical workings of the machines. Also an attempt is made to rationalize the use of mechanical equipment by comparing applications as they would be handled manually with the same applications using punched card equipment. This second phase, in itself, can serve as a replacement for course work in machine accounting (punched card systems) now being taught in various schools.

<sup>1</sup> This article was written in February, 1959 at which time class work in the course commenced.

The third and major portion of the course is concerned with actual electronic data processing. The student is introduced to EDP with an historical sketch leading from the abacus up to present-day computers. At this time a machine demonstration is arranged showing a business application such as payroll preparation, as well as a game such as three dimensional tick-tack-toe with the student playing against the computer.<sup>3</sup> The demonstration and the game seem to stir the student's interest in the course and computers in general. With this introductory material the impact of EDP on various facets of the economy is discussed.

Following the introductory material the student studies the various components making up a computer installation, i.e. input, control, logic and arithmetic, storage, and output. With this material the student is instructed in language of the computer. This discussion of language does not extend very deeply as the majority of students in the School of Commerce do not take mathematics beyond college algebra.<sup>4</sup> The binary system and its present-day modifications comprise the major portion of the information given in regard to language of the computer.

Lectures on programming the 650 are given during this third phase. Approximately three weeks of classroom work and extra laboratory sessions follow in which the student will program very simple business problems in basic machine language. The more advanced programming techniques such as SOAP, For transit, and Bell will not be considered during this course.

After programming, the following points will be developed: (1) points to consider before buying or leasing EDP equipment, (2) scheduling of machine time, (3) administrative problems experienced in introducing

computer systems, (4) the place of the data processing section in a business organization, and (5) integrated data processing.

To my knowledge there is no textbook in the usual sense of the word available in the field of electronic data processing. However, there are a number of informative reference works. Among these is *An Introduction to Automatic Computers* by Chapin<sup>5</sup> which we are using as a combination text and reference manual. Also, reference material is provided on a reserve basis in the library. Class lectures do not follow Chapin's book, and have been prepared from several sources.<sup>6</sup> Students are strongly encouraged to read Chapin, however, as well as material on reserve. In addition IBM has made available various descriptive bulletins which are distributed to the students coincident with classroom discussion of material covered in the bulletins.

One can always benefit from discussion with others. Therefore, I would welcome any inquiries from those planning a course in EDP, or suggestions from those whose plans have been developed further than my own.

<sup>3</sup> Students in this first semester will also have an opportunity to observe a management game demonstrated.

<sup>4</sup> Ned Chapin, *An Introduction to Automatic Computers* (Princeton, New Jersey: D. Van Nostrand Company, Inc., 1957).

<sup>5</sup> Richard G. Canning, *Electronic Data Processing for Business and Industry* (New York: John Wiley & Sons, Inc., 1956).

Richard G. Canning, *Installing Electronic Data Processing Systems* (New York: John Wiley & Sons, Inc., 1957).

Haskins & Sells, *Data Processing by Electronics*, 1955.

Haskins & Sells, *Introduction to Data Processing*, 1957.

Gardner M. Jones, *Electronics in Business*, Michigan State University, 1958.

George Kozmetsky and Paul Kircher, *Electronic Computers and Management Control* (New York: McGraw-Hill Book Company, Inc., 1956).

Charles N. Moore, Thomas N. Humble, and H. H. Chapman, *Electronics in Business Management*, University of Alabama, 1956.

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## THE PROFESSION'S RESPONSIBILITY IN ATTRACTING STUDENTS

KENNETH W. PERRY

*University of Illinois*

According to a recent issue of *The Occupational Outlook Handbook*<sup>1</sup> the number of students graduating from college each year in the field of accountancy declined between the years 1950 and 1954 by nearly 50 per cent. We are currently witnessing the continuation of this trend, and while it is perhaps not as drastic as during the 1950-54 era, it is nevertheless significant. It would appear that one of the primary reasons for this decline is the time period in which we are living—an age which tends to glamorize the scientific curriculum with a concomitant deglamorization of the non-scientific. Paradoxically the need for qualified accountants has never been greater than at the present time. With demand far exceeding supply the prospect of this situation continuing, and even worsening, should give cause for deep concern and even alarm. Consequently, in this era of "orbiting satellites," "intercontinental ballistic missiles," and "pentomic armies," we of the accounting profession must face facts and recognize that it is up to us to find ways to attract our share of students, especially good students.

As this writer sees it the profession has one basic responsibility in this area—to sell the accounting profession wherever and whenever possible, either directly or indirectly, to potential students. It is the opinion of this writer that, generally speaking, we as accountants do a less than adequate—as a matter of fact, a very poor—job of selling the profession to this group. If we of the profession fail in this respect, how can we expect to get the job done? Certainly others are not going to do it for us!

We must wake up and realize that we are

in direct competition with other professions, and if we are to attract our share of high caliber students we must be ever alert for opportunities to sell our own profession. The fulfillment of this responsibility calls for a merger of the academic and practical. Each one of us, whether academician or practicing accountant, must sell the profession whenever and wherever possible. Each of us must carry his share of the load if we are to get the job done. A "let George do it" approach will not suffice.

Selling opportunities are ever present—in the high schools, on college and university campuses, in the community, and throughout the state and nation. Although the following discussion is not intended to be exhaustive, it is nevertheless indicative of what might be done in (1) the high schools, and (2) the colleges and universities, with the same general approach applicable elsewhere.

### *High Schools*

Most of us after having completed high school have a tendency to lose contact with the schools. This is unfortunate not only from the standpoint of the profession but also from that of the entire educational system. We as accountants have something to contribute, and one of the ways we can best sell our profession is to inspire confidence and respect for the accountant and his work both in the school and the community.

We should, whenever possible, support the schools by actively participating in such organizations as schools boards, PTA's,

<sup>1</sup> *The Occupational Outlook Handbook*, 1957 (Washington, D. C.: United States Printing Office, 1958), p. 32.

and scout groups. In addition we should make every effort to get better acquainted with the staffs and faculties, become aware of their problems, and assist them wherever possible. For example, it has come to the attention of this writer, as chairman of the American Accounting Association's Committee on Accounting Careers, that there is a dire need on the high school level for information regarding opportunities for high school graduates. This need has been evidenced by the receipt during the past few months of hundreds of requests not only for *Young Eyes on Accounting*, the career pamphlet published by the Association in cooperation with the American Institute of Certified Public Accountants and the Institute of Internal Auditors, but also by the desire expressed by high school faculty members to be placed on the Association's mailing list for any subsequent mailing of material of this kind. The high schools are endeavoring to do the best job possible, but they need help—help which we can give them if we take the time and effort to get better acquainted with them and their problems.

Whenever possible we should support and, on occasion, sponsor student organizations such as Future Business Leaders of America. FBLA, sponsored nationally by the National Education Association, has more than 1,500 chapters throughout the country. Each chapter is sponsored locally by a teacher in the school and one or more persons from the community—businessmen, representatives of civic groups, local chambers of commerce, and the like. Organizations of this nature not only provide excellent opportunities for us as accountants to contribute to the educational process but also provide avenues for selling our profession to high school students.

In addition to supporting the high schools in general and student organizations in particular, we should also welcome the opportunity to participate in career-

day activities and other student meetings when called upon. Participation may range all the way from the giving of a talk to the obtaining of handout material for the students; in any case, we should not pass up the opportunity to be of service. In this way we will not only assist in selling the profession but also contribute to the overall educational process.

### Colleges and Universities

Although much of the selling job should have been accomplished before the student arrives on a college or university campus, there are nevertheless many opportunities here for additional selling. This is especially true in schools where students do not select their major fields of concentration until the sophomore or junior year. However, even in those where the major is selected prior to or shortly after enrollment, much effective selling may be carried out if properly approached. Again the following discussion is not intended to be exhaustive but only indicative of what might be done on college and university campuses. For discussion purposes the activities are viewed from the standpoint of what (1) the academic, and (2) the nonacademic member can do.

*Academic Members.* The classroom, of course, provides the academic member with one of his best opportunities for selling the profession. However, Professor Lanham<sup>2</sup> in his article in the June, 1958, issue of *The Journal of Accountancy* implies that we as teachers frequently fail to take advantage of this opportunity. It is his opinion that too often we present accounting as a dull, listless routine, rather than as the dynamic, creative process it actually is. It is hoped that this is the exception rather than the rule, but in the event that Professor Lanham is correct in his belief, the situation must not be allowed to continue. We must

<sup>2</sup> J. S. Lanham, "The Attraction and Selection of Accounting Personnel," *The Journal of Accountancy*, June, 1958, p. 70.

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teach accounting not as if it exists in a vacuum, but rather on the basis that it is part of, and cannot be segregated from, the social whole. In the classroom we must ever be conscious of the fact that we are "salesmen" and as such must sell our product (accounting) to the utmost. To do this the accounting teacher not only must be technically competent, but he must also radiate interest and enthusiasm in his subject.

The elementary courses, especially in schools where nonaccounting majors are required to take some courses in accounting, are often excellent places to "sell." Although many students come to the campus with definite plans, a large number have not yet decided on their major field of study. This latter group can frequently be sold on accounting if the instructor does an adequate job in the elementary courses. It is the opinion of this writer that some of the best instruction should be in these beginning courses—all too often advanced undergraduate and graduate teaching is emphasized to the detriment of these basic courses.

In addition to the college or university classroom, we as academic members must also do everything possible to sell the profession elsewhere on the campus. It is up to us to increase the prestige of the profession here as well as in the campus community. In his article Professor Lanham<sup>2</sup> indicates that accounting teachers are not held in particularly high esteem by faculty members in other areas of business and economics, much less in other departments on the campus. Again it is hoped that this is the exception rather than the rule, but if such a situation exists, it must be corrected. If we cannot sell the profession to our own colleagues, it will be doubly difficult to make an impression elsewhere.

We as academic members should not hesitate to carry our share of college and/or university assignments—assuming respon-

sibility in this area aids in the development of prestige for both the accounting department and the accounting profession. We should also help and encourage our students to develop into campus leaders. Their recognition and prestige may result in the attracting of other students to the field; after all nothing succeeds like success. Our students should be encouraged to participate in such organizations and activities as student senates, student councils, and student newspapers whenever and wherever appropriate.

In similar vein we should put forth every effort to see that our outstanding students receive deserved recognition. Too often we fail to take advantage of the fact that we do have many superior students in accounting. For example, in the 1958 graduating class at the University of Illinois seventy-two students were honored by having their names engraved on the Bronze Tablet (the highest scholastic recognition offered by the University). Nine of the seventy-two so honored were accounting majors. Many accounting students also not only excel scholastically but are outstanding in other areas of campus life. The College of Commerce at the University of Illinois annually recognizes ten outstanding commerce graduates, basing the award not only on scholastic achievement but on other activities as well. Six of the ten so recognized in 1958 were accounting majors. Too often we as accountants take a passive attitude, even a negative approach, toward accomplishments of this nature, when in reality today's competitive position in which we find ourselves requires a positive outlook. Let's not hide our light under a bushel! We must abandon the introversive attitude and make our accomplishments and those of our students known.

*Nonacademic Member.* Although the non-academic member does not have exactly

<sup>2</sup> *Loc. cit.*

the same occasions for selling the profession on college and university campuses as does the academic member, he nevertheless has a variety of opportunities. He need only to look for them and recognize them when they appear. For instance, he can do a lot of selling by actively participating in such campus activities as (1) career conferences, (2) accountancy club and Beta Alpha Psi meetings, and (3) symposiums. He can also do a lot of selling when on the campus in the role of "recruiter."

Most colleges and universities annually conduct career conferences of one kind or another in order to help students prepare for future college study and to obtain up-to-date information regarding job opportunities. Speakers from all areas are invited to present their respective fields. Members of the profession, whether academic or nonacademic, should welcome the opportunity to sell the profession when called upon to participate in these conferences.

Many accounting departments sponsor accountancy clubs or Beta Alpha Psi chapters, or both. These organizations usually have a planned program of speakers, many of whom come from outside the academic ranks. A favorable impression left by a guest speaker at one of these meetings spreads around and cannot but help to sell the profession.

At least one public accounting firm in recent years has been conducting a symposium on some college campuses. The symposium, consisting of an afternoon, dinner, and evening session, presents many facets of the accounting profession to interested college students, and since the firm as a rule underwrites the dinner, students are usually interested. If the symposium is well organized and presented in an interesting fashion, as the one referred to here has been, a lasting impression is made upon the students who attend, and they in turn may influence others.

In addition to selling the profession at student meetings of one kind or another the nonacademic member also has an excellent opportunity to sell the profession when on the campus in the role of recruiter. Some recruiters all too often appear to be concerned only with selling their particular organization to a particular student, rather than with selling the profession to everyone possible. Granted, their primary purpose for being on the campus is to attract students to their own organization, nevertheless their actions while in the recruiting process can have a much broader effect. For instance, an unprofessional attitude by a recruiter toward a particular student may have widespread repercussions and as a result cause irreparable damage to the profession. The student in question may be a leader in his particular house, dormitory, or group, and as a consequence he may be able to influence a large number of students, students who may or may not have selected a major. Consequently, the profession has nothing to gain whatsoever if a given recruiter is rude, crude, or unprofessional in any way in his contact with students. This is true regardless of how justified his actions might be in any given situation. However, if he is always the gentleman, ever the professional man, he can sell the accounting profession even when rejecting a particular student.

### *Conclusions*

In conclusion it should perhaps be reiterated that in this writer's opinion the profession's primary responsibility in the area of attracting students is basically one of "selling." We of the accounting profession must sell our product (accounting) whenever and wherever the occasion presents itself, if we are to attract our share of students. We must be ever on the alert for the occasion, because it might present itself in a high school, on a college or university campus, in the community, or else-

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Although much of the current trend toward the study of scientific curricula is a direct result of the time period in which we are living we must realize that we cannot hold back the frontiers of time. Neither can we as accountants exist in a vacuum. We must recognize that from the standpoint of

attracting students we are in direct competition with other professions and must act accordingly. We can do the job if each of us will do whatever we can whenever the occasion presents itself. A "let George do it" approach, however, will not get the job done.

## THE RATIO AND PROPORTION METHOD OF PREPARING A PROGRAM OF PRIORITIES FOR CASH DISTRIBUTION IN PARTNERSHIP LIQUIDATION

A. THEODORE MUELLER

Widely-used currently-published accounting texts suggest several methods of setting up a priority payment program together with a schedule showing the allocation of cash in accordance with a program for proper distribution of such cash when a partnership is being liquidated by installments. Back files of *THE ACCOUNTING REVIEW* present most such methods; see for example:

Elmer R. Young, "Controlling Installment Distributions to Partners in a Liquidating Partnership," Vol. XXIV, Oct. 1951, p. 555-9.

W. Tate Whitman, "Liquidation of Partnerships in Installments," Vol. XXVIII, Oct. 1953, p. 576-7.

Wilton T. Anderson, "Master Schedule for Partnership Dissolution—Installment Basis," Vol. XXX, Jan. 1955, p. 139-44.

Harry Simons, "Priority Program Approach to Partnership Liquidation by Installments," Vol. XXX, April 1955, p. 344-7.

The author has been unable to find any record of the use of "ratio and proportion" to treat this problem, hence this paper is written to point out how such a solution is possible. To illustrate this method, before going to a more complicated problem, let it be assumed that partners A and B have capital accounts of \$30,000 and \$25,000 respectively and a profit-and-loss ratio of 75% and 25%.

It is well known that if the capital accounts are not in their profit-and-loss ratio

at the time of liquidation, one partner must receive a certain amount of cash, made available from asset realization, before the other can participate in any cash distributed. By comparing one partner's capital and profit-and-loss ratio with those of the other, it is possible to determine the amount of cash one partner must receive before any cash may be distributed to the other. For comparison, the following proportion can be stated:

A's profit %:A's Capital::B's Profit %:X  
75%:\$30,000::25%:X

(This is read as follows: 75% is to \$30,000 as 25% is to X)

The solution indicates that X equals \$10,000. From this it can be deduced that B must receive the first \$15,000 (B's capital, \$25,000, minus \$10,000 as calculated) cash in order to reduce his capital to \$10,000, at which point the two balances are in the profit-and-loss ratio. After B receives the first \$15,000, the balances of their capital accounts are \$30,000 and \$10,000. These figures are in the profit-and-loss ratio of 75% to 25%, and the two partners will share any further distribution of cash in this ratio.

Now to expand this problem and assume a partnership with four capital accounts and profit-and-loss percentages as follows:

Partner A, \$18,000, 30%  
B, \$16,000, 20%  
C, \$20,000, 20%  
D, \$27,000, 30%.

First, it is necessary to digress a bit to determine the maximum firm loss which each partner could absorb in terms of his present capital. This is done by dividing each capital balance by its related profit-and-loss percentage. The following are determined:

Partner A, \$18,000 divided by .30 equals \$ 60,000  
 B, \$16,000 divided by .20 equals \$ 80,000  
 C, \$20,000 divided by .20 equals \$100,000  
 D, \$27,000 divided by .30 equals \$ 90,000.

From this calculation it can readily be seen, in case of a total loss of all the firm assets, which partner would be the first to lose all of his capital, but it also indicates the order in which the partners would receive cash—C has priority over D; D and C over B; and B, C and D over A.

By the ratio and proportion method, D's percentage and capital amount (the partner with the second highest loss absorption ability) can be compared with C's capital amount and percentage (the one with the highest loss absorption ability) and it can be determined what the capital amount of C would be if it were in the profit-and-loss ratio with the capital amount of D. The problem is stated in this way:

D's profit %:D's capital::C's profit %:X  
 30%:\$27,000::20%:X

By solution X equals \$18,000. This calculation shows that C's capital should be reduced to \$18,000 in order to bring it down to the 20% profit-and-loss percentage when compared with D's 30%, with capital of \$27,000. The difference between C's capital amount of \$20,000 and the \$18,000 as calculated (\$2,000) is the amount of cash C must receive before D (also B and A) may receive any. After the first \$2,000 cash is distributed to C, then C's capital is reduced to \$18,000, and C and D's capital accounts are in their profit-and-loss ratio, namely 20:30. Note that these two will share any future cash distributions in this relative proportion. (See the Program of Priorities which follows.)

Now to compare the two partners with highest priorities after partner C:

B's profit %:B's capital::D's profit %:X  
 20%:\$16,000::30%:X

By solution X equal \$24,000. Thus D's capital should be reduced to \$24,000, to a point where it and B's capital balance are in the profit-and-loss ratio. The difference between D's capital amount of \$27,000 and the \$24,000 as calculated (\$3,000) is the amount of cash D must receive before B (and A) may receive any. But partner C must also receive cash in his relative profit-and-loss percentage at the same time that partner D gets cash. Therefore, if D with a 30% share gets \$3,000, partner C with a 20% share must receive \$2,000. Thus D and C together will receive the next \$5,000 before any cash can be paid to B. (See the Program of Priorities which follows.)

Now, if it is assumed that cash is distributed as calculated above—that C received the first \$2,000 and, of the next \$5,000, C received \$2,000 and D \$3,000, then the capital accounts of B, C and D would stand as follows:

B, \$16,000  
 C, \$16,000  
 D, \$24,000.

These three amounts are in their profit-and-loss ratio, namely 20:20:30, and these three partners will receive any future cash distribution in this ratio.

Now to compare the two partners with highest priorities after partner D:

A's profit %:A's capital::B's profit %:X  
 30%:\$18,000::20%:X

By solution X equals \$12,000. This calculation shows that B's capital should be reduced to \$12,000 before A will share in any distribution of cash. Since B's capital is now \$16,000, the difference of \$4,000 is the amount of cash B will receive before any distribution can be made to A. However, if B receives cash, partners C and D must also. As stated above, the capital accounts of these partners, B, C and D, are

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**PARTNERS A, B, C, AND D**  
**PROGRAM OF PRIORITIES FOR CASH DISTRIBUTION IN PARTNERSHIP LIQUIDATION**

	A 30%	B 20%	C 20%	D 30%
Partners' Profit Sharing Percentages.....	\$18,000	\$16,000	\$20,000	\$27,000
Partners' Capital Balances.....				
Allocation I				
First \$2,000 goes to C.....			2,000	
Balances (C and D in profit-and-loss ratio)....	\$18,000	\$16,000	\$18,000	\$27,000
Allocation II				
Next \$5,000 goes to C and D.....			2,000	3,000
Balances (B, C and D in profit-and-loss ratio)...	\$18,000	\$16,000	\$16,000	\$24,000
Allocation III				
Next \$14,000 to B, C and D.....		4,000	4,000	6,000
Balances (all in profit-and-loss ratio).....	\$18,000	\$12,000	\$12,000	\$18,000

(This method eliminates the need to work with "loss absorption balances" in the preparation of the program.)

in their profit-and-loss ratio of 20:20:30; so, any cash distribution to these three must be made in this ratio. Thus B will get \$4,000 before A receives any cash; but C must also receive \$4,000 and D must receive \$6,000 before there can be a distribution to A. In the distribution of cash, a total of \$14,000 will go to partners B, C and D before A is entitled to any.

With such a program to show the priority rating of the partners, it is easy to construct a schedule to show the allocation of cash in accordance with the program of priorities. Below is such a schedule when it is assumed that cash is made available for distribution at various times in the following amounts: \$1,000, \$3,500, \$13,000, and \$8,500.

Now if it is assumed that these amounts of cash have been distributed, and the capital accounts of B, C and D are reduced by the amount distributed, the capital accounts are in their profit-and-loss ratio (see the Program of Priorities above), so that if any cash is realized after this, it will be distributed to A, B, C, and D in their profit-and-loss ratio, namely 30:20:20:30.

From the above data a Program of Priorities for Cash Distribution in Partner-

ship Liquidation can be prepared as shown above.

Just after the Balance of Allocation III (\$3,500) was paid to B, C, and D, the schedule shows that B, C, and D had received totals of \$4,000, \$8,000, and \$9,000 respectively. By subtracting these amounts from their respective starting capital amounts their balances are:

A, \$18,000  
 B, \$12,000  
 C, \$12,000  
 D, \$18,000.

Their capital amounts are in their respective capital ratios of 30:20:20:30, and any further distribution of cash, as shown by the final distribution of \$5,000 in the schedule, will be made in the partners' profit-and-loss ratio.

It may be interesting, as well as helpful, to note that the payments and allocations can easily be followed on this schedule. The line showing the total payment to date will agree with the amount of cash made available for distribution. By combining amounts in the section "Payments to Partners," the allocation of funds can be traced to, and found to be in accord with, the Program of Priority of the funds—the first \$2,000 to C; the next \$5,000 to B and C; and the next \$14,000 to B, C, and D.

**PARTNERS A, B, C, AND D**  
**ALLOCATION OF CASH IN ACCORDANCE WITH PROGRAM**  
**OF PRIORITIES FOR CASH DISTRIBUTION**

Procedural Information	Payments to Partners			
	A	B	C	D
First Instalment, \$1,000:				
Allocation I to C.....	\$ 2,000			
Payment to C*.....	1,000		\$1,000	
Balance.....	\$ 1,000			
Total paid to date*.....			\$1,000	
Second Instalment, \$3,500:				
Balance of Allocation I to C.....	\$ 1,000		1,000	
Allocation II to C and D.....	\$ 5,000			
Balance of cash on hand of \$2,500 to C and D in ratio of 20:30.....	2,500		1,000	\$ 1,500
Balance.....	\$ 2,500			
Total paid to date.....			\$3,000	\$ 1,500
Third Instalment, \$13,000:				
Balance of Allocation II to C and D.....	\$ 2,500		1,000	1,500
Allocation III to B, C and D.....	\$14,000			
Balance of \$10,500 cash on hand to B, C, and D in ratio of 20:20:30.....	10,500	\$3,000	3,000	4,500
Balance.....	\$ 3,500			
Total paid to date.....		\$3,000	\$7,000	\$ 7,500
Fourth Instalment, \$8,500:				
Balance of Allocation III to B, C, and D.....	\$ 3,500	1,000	1,000	1,500
Balance of \$5,000 to A, B, C, and D in ratio of 30:20:20:30.....	\$ 5,000	\$1,500	1,000	1,000
Total paid to date.....	\$1,500	\$5,000	\$9,000	\$10,500

(Any further distribution of cash would be made in the profit-and-loss ratio.)

\* In actual practice, actual dates would be used when payments were made, and the preparation of such a schedule would progress as payments are made.

## AN APPROACH TO ELEMENTARY ACCOUNTING FOR NON-BUSINESS STUDENTS

RICHARD S. PERRY

*University of California, Los Angeles*

Three movements among colleges and universities now threaten the lives of all lower-division courses in business administration. The first is the return to an undergraduate program dominated by the liberal arts courses; the second, complementing the first, is the postponement of all professional education until the upper-division or preferably the graduate years;

the third is the elimination of all courses which are "pre-judged" as occupational and vocational in objective.

Elementary accounting, the foundation course for practically all curricula in business administration, appears to be directly in the path of these three movements. If it is to survive the onslaught, it may have to undergo some drastic revisions. The alter-

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native, of course, is to join the "panic" and ride out the storm. One solution to the problem is to redesign the course so it will better fit the pattern of education demanded by those behind the three above-mentioned movements.

Realizing that curricula should be constantly revised in terms of the changing needs of college students, the author of this investigation examined rather closely the objectives of the elementary accounting course and compared these objectives with the needs of the students who take either one or both semesters of the course. The findings indicate that a large proportion of college students who enroll in the usual elementary course, especially those who take only the first semester course, would benefit more from a one-semester course in which emphasis is placed on the understanding of financial data and the fundamentals of corporate accounting.

#### A LOOK AT THE PROBLEM

The course in elementary accounting at the college and university level draws its students from many fields of study. Although there is a diversity of interests among these students, the interests of the business majors can be clearly differentiated from those of non-business majors. Whereas the business majors plan to use their accounting knowledge directly in their professions, the non-business majors have no such plans. Because the interests of each group are different, the needs of each group are also different.

During the fall semester, 1958, 346 students at the University of California, Los Angeles, enrolled in elementary accounting (see Table I). Of these students, only 73, or 21.1 per cent, indicated a desire to major in accounting. Another 39.6 per cent were pre-business majors who did not intend to specialize in accounting. The remaining students were *non-business majors*; they comprised 39.3 per cent of the total en-

rollment in elementary accounting. These students became the subject of this study for two basic reasons: their major interests were outside the field of professional business management and their needs were not met by the present elementary accounting course, particularly the first semester of the year course. It should be noted that 28.1 per cent of those enrolled in the elementary accounting course were required, as non-business majors, to take at least one semester of the year course. The remaining non-business majors, 11.2 per cent, elected to take the one semester course.

ENROLLMENTS IN ELEMENTARY ACCOUNTING CLASSIFIED ACCORDING TO STUDENT MAJOR, UNIVERSITY OF CALIFORNIA, LOS ANGELES  
(Fall Semester, 1958)

Major	Number	Per Cent
Accounting.....	73	21.1
Business Administration—non-accounting.....	137	39.6
Non-Business Administration—requiring at least one semester of accounting.....	97	28.1
Non-Business Administration—electing one semester of accounting.....	39	11.2
Totals.....	346	100.0

#### NON-BUSINESS MAJORS

The non-business majors who were required to take at least one semester of elementary accounting came from such departments as business education, apparel merchandising, economics, home economics, political science, and public administration. Those who took the course as an elective were from departments of sociology, history, agriculture, mathematics, education, and psychology. The variety of interests represented by these areas of specialization did not appear to coincide with the objectives of the present elementary accounting course. This fact becomes more apparent when one examines the probable needs of the non-business major.

## NEEDS OF NON-BUSINESS MAJORS

The needs of non-business majors in an elementary accounting course may be classified as personal, socio-economic, and general education for business.

*Personal*

Those who take the course to satisfy personal needs use accounting constantly in handling their income and expenditures. They apply the principles of elementary accounting to simple activities such as writing a check and making a family budget, and to more complex activities such as filling out an income tax return. These personal objectives, however, are probably only a secondary importance in their study of accounting.

*Socio-Economic*

In discussing the socio-economic needs of non-business majors who take elementary accounting, the following definition of economic should be kept in mind:

"Economic—of or pertaining to the management of the affairs of a government or community with reference to its source of income, its expenditures, the development of its natural resources, etc."<sup>1</sup>

A knowledge of accounting aids in the understanding of our economic environment. A student needs a background in accounting to grasp the significance of the finances and control of business organizations (the most significant business organization in our economy being the corporation), of government, of churches, and of social organizations; all are important to the continuation of the American economy.

*General Education for Business*

The non-business majors will come in contact with business terminology because it pervades every walk of life. Since accounting has often been referred to as the "language of business," a basic understanding of accounting is needed by all

who wish to communicate intelligently in a world of business. An understanding of accounting assumes, also, an ability to interpret accounting data, something which is requisite to efficient operation in an economic environment based upon the profitable exchange of goods and services. Moreover, if the contribution of an individual to society is rewarded in terms of a monetary profit, a knowledge of accounting will enable him to measure such profit or loss and to examine the source of that profit or loss.

## THE PRESENT COURSE

Now that the general needs of the non-business students of elementary accounting have been set forth, the next step is to point up selected areas in the content of the present course (including the practices required of the students) which do not appear to be in agreement with the needs of these non-business majors. The textbook used in elementary accounting is the best source of information concerning the subject matter presented in the course.

The plan followed by most elementary accounting textbooks shows an emphasis, in the first semester, on accounting as related to the single proprietorship and partnership forms of organization. The second half of the textbook, treated in the second semester, emphasizes accounting as it relates to the corporation. Since this study revealed that a significant number of non-business majors take only the first semester course in elementary accounting and that their primary objective is to gain an understanding of the operation of the principal type of business organization in our economy, there is reason to expect that this need will not be met in a one-semester course. The corporation, the most significant form of ownership, receives no attention in the first semester course.

<sup>1</sup> Webster's New Collegiate Dictionary (Springfield: G. & C. Merriam Company, 1956), p. 927.

A closer look at the content of the elementary course shows an emphasis on the training of accountants. Skill in the purely technical aspects of accounting seems to be stressed. Moreover, when these technical aspects are evaluated in the light of the previously mentioned needs of the non-business majors it becomes obvious that the present course is not directed toward these students. A discussion of some of the subject matter and activities in the present course as related to these objectives follows:

1) *Assignment of considerable practice of a repetitive nature.* It is conceded that the non-business major must have a certain amount of practice before he can learn and understand the accounting process, but does he need the same amount of practice and the same degree of skill in the technical aspects as does the accounting major? Example: Extensive practice work in posting, balancing, and ruling the ledger accounts.

2) *Presentation of alternative methods of handling one accounting procedure.* A knowledge of all methods and procedures used is not required for understanding the basic or fundamental accounting theories. Example: Alternative methods of handling accrued and deferred items and alternative methods of handling the exchange of a fixed asset due to income tax and financial accounting conflicts.

3) *Introduction of many activities which contribute to the professional knowledge of the accountant.* Although such activities are of extremely limited application in practical affairs and rarely occur in the business world, all are taught in order to give adequate training for those who aspire to the profession of accountancy. Example: Using ambiguous account titles which the student must analyze and distinguish such as (1) Reserve for Bonded Indebtedness and (2) Reserve for Bond Sinking Fund. These two accounts refer both to a reserve and to an

appropriation account in the capital section. The second one, however, might be mistaken for an investment account in the assets section.

Professor Myer recognized this problem and summed up the present course offerings in accounting as follows:

"The emphasis in the usual accounting curriculum has been to a large extent in this direction (the training of accountants) and various of the courses are overloaded with material which is of value only to those seeking to pass a certified public accounting exam."<sup>2</sup>

Based on this brief discussion, it appears that the technical emphasis in the elementary accounting course both in text and application does not meet the basic needs of the non-business major.

#### SUGGESTIONS FOR THE PROPOSED COURSE

Before a discussion of the proposed course is begun, it should be noted that the present *year course* in elementary accounting meets the basic needs (personal, socio-economic, and general education for business) of the non-business majors as far as general coverage of content is concerned. Not all, however, take the full year course. Although only 39 per cent of the enrollees in the elementary accounting courses would have been eligible for enrollment in the proposed one-semester course, it is assumed that with the changes in course description, content, and methods of presentation this percentage would increase significantly.

The one-semester course planned for the non-business student should be presented concisely, excluding superfluous material such as the technical aspects, the repetitive practice, and the professional accountant's problems which are included in present one-year elementary accounting courses. The basic accounting theories and con-

<sup>2</sup> John N. Myer, "Management Accounting," *Journal of Business Education*, XXII (December, 1951), p. 168.

cepts, accounting terminology, and sound groundwork in methods should be continued in this course.

This conciseness, however, should not be sought at the expense of adequacy. It must be remembered that the non-business students plan to use accounting as part of their general education for life in a world of business. Accounting should contribute to this general background by emphasizing the important aspects of our business and economic world, especially the corporate form of organization.

A course in elementary accounting designed specifically for the non-business major, excluding the subjects which are of benefit only to those who plan to use accounting in their profession, would definitely meet their needs better than the present year course being taken by all who wish experiences in accounting.

#### PLAN OF ACTION

Assuming that those who are interested in accounting curricula favor the introduction of a one-semester elementary accounting course for the non-business majors on the collegiate level, they must now initiate the leadership which will culminate in the establishment of such a course. Chances are good that the most difficult problem will be that of apprising college administrators of the need of this special course. Below are four suggested steps the accounting faculty should consider:

1) Initiate an investigation, similar to this one. If the results indicate that a large percentage of the students take only the first semester of elementary accounting, then the instructor can proceed to the next step because the number who would enroll is large enough to warrant a special course.

2) Change the title and description of the course so that it will not be excluded from the accepted liberal arts curricula be-

cause it suggests vocational or professional endeavor. "Elementary Accounting," which is much too descriptive could be changed to "Accounting in a Free Enterprise System" or "Evolution of Accounting Theory in the United States." Such titles will quiet the nerves of the most avid supporter of liberal arts for the liberally educated.

3) Design a detailed outline for a one-semester course for the non-business majors. To aid the accounting instructor in formulating such a course outline, the author suggests that the following subjects be included, but perhaps in disguise:

Evolution of Numerical Analysis  
Growth and Development of Single and Double Entry Bookkeeping  
Meaning and Purpose of Accounting  
Corporate Statements  
Accounts and the Trial Balance  
Work Sheet and Accounting Statements  
Accounting Cycle  
Special Journals  
Accounting Procedures  
Accounting for Notes and Interest  
Estimating Procedures in Valuation  
Periodic Summary  
Corporate Organization and Accounts  
Corporate Capital  
Sole Proprietorships and Partnerships  
Analysis of Financial Statements

4) Using the newly created course title and description, the instructor is ready to sell the course to the liberal arts faculty. His primary job is to show the relationship accounting has to the social, economic, and political development of 20th century American life.

#### NOTE

In the article "The Dynamic Equation of Accounting" by Lawrence Lipkin appearing on pages 134 and 135 of the January 1959 issue of *THE ACCOUNTING REVIEW*, the equation stated as  $A = L + P + (R - E)$  should have been stated  $A = L + [P + (R - E)]$ .

## PROFESSIONAL EXAMINATIONS

### ACCOUNTING PRACTICE

HENRY T. CHAMBERLAIN AND JOHN H. CHAMBERLAIN

THE following problems were prepared by the Board of Examiners of the American Institute of Certified Public Accountants and were presented as the first half of the C.P.A. examination in accounting practice on May 13, 1959.

The candidates were required to solve problem 1 and problem 2 and any two of the remaining three problems.

The suggested time allowances are as follows:

Problem 1	20 to 30 minutes
Problem 2	25 to 40 minutes
Any two of the remaining three problems	130 to 200 minutes

The time allowed for this section of the examination was four and a half hours.

#### Number 1

The following statements relate to federal income taxes under the 1954 Internal Revenue Code.

On a sheet of lined paper enter numbers from 1 through 25 each on a separate line. Select the letter which identifies the answer and enter on the appropriate line.

1. Mrs. A's husband died in 1957 and she is his sole survivor, there being no children. In determining her income tax for the years 1957 and 1958, she may avail herself of the benefits of income-splitting as a "surviving spouse." (A) True (B) False

2. B's son is a college student who has summer vacation earnings of \$800 which he uses toward his own support. B furnishes the remainder of his support at a cost of \$1,000. Since the son has to file a return and claims his own personal exemption of \$600, B is not entitled to claim an exemption for him as a dependent. (A) True (B) False

3. C is a married man with three children and earns a salary of \$3,600 per year. C also has certain stock investments from which he normally receives dividends of \$150 per year. He is required to file a Declaration of Estimated Tax. (A) True (B) False

4. In June 1958 D purchased for \$15,000 cash an annuity paying him \$100 per month beginning July 15 and continuing for life. One-half of 3% of \$15,000 or \$225 is includible in his 1958 income and the remaining \$375 represents a return of cost. (A) True (B) False.

5. E receives a salary of \$125 per week from an employer who has a plan under which he continues the payment of salaries to employees during periods of absence due to illness. E is absent due to illness for a period of two weeks during which period he is hospitalized for two days of the second week. E is entitled to exclude from gross income \$100 per week for the entire period of absence. (A) True (B) False

6. F sells his personal residence which has a tax basis of \$10,000 for \$16,000. No selling expenses were incurred. Within one year from the date of sale he purchases a new residence at a cost of \$14,000. Gain is recognized to the extent of \$2,000 and the tax basis of the new residence is \$10,000. (A) True (B) False

7. G owns a working interest in an oil lease on which his entire leasehold cost has been recovered through depletion claimed and allowed. Since his basis has been recovered in full, he is not entitled to any further deduction for depletion. (A) True (B) False

8. H exchanges a machine used by him in his business and having an adjusted tax basis of \$2,000 for a similar machine having a fair market value of \$2,200 and in addition receives \$300 in cash. He has a taxable gain of \$500. (A) True (B) False

9. In 1951 "I" sold stock which had cost him \$5,000 to his son for \$3,000. Upon sale of this stock by his son in 1958 for \$6,000, the recognized gain is \$3,000. (A) True (B) False

10. J owns stock of the X Company which declares a dividend payable December 31, 1957. The check was written and dated December 31, 1957, and mailed January 1, 1958. J, a cash basis taxpayer, receives the check in the regular course of mail delivery on January 2, 1958. The amount is includible in his 1957 income. (A) True (B) False

11. On December 15, 1957 K sells for \$10,000, stock which cost him \$11,000 and on January 5, 1958 he purchases identical stock for \$10,000. The loss on the 1957 sale is not recognized and the basis of the stock purchased in January upon subsequent sale is \$11,000. (A) True (B) False

12. L is president of Y Corporation and owns 30% of its outstanding stock. His wife is the owner of 25% of the stock. At December 31, 1957 the Corporation on the accrual basis has a liability to L for unpaid salary which it is unable to pay and which L, on the cash basis, did not take into 1957 income. The accrued salary is paid to L in September 1958. The amount will be taxable to him in 1958 but will not be allowable to the Corporation as a deduction in either 1957 or 1958. (A) True (B) False

13. M sells a piece of real estate for \$50,000 with annual payments of \$10,000 beginning in the year following the date of sale. His adjusted basis is \$35,000. He may elect to report the profit in installments and, assuming the payments are received when due, report \$3,000 of the profit as long-term capital gain in each of the five years. (A) True (B) False

14. In 1958 N sells for \$5,000 stock which he received in 1954 as a gift at which time the stock had a fair market value of \$4,500. The donor's adjusted tax basis for this stock was \$5,500. N has a recognized loss of \$500. (A) True (B) False

15. In the year 1958 O has the following gains and losses:

Loss on sale of machinery used in his business and held for more than 6 months	\$ 5,000
Loss on condemnation of land used in the business and held for more than six months	10,000
Total	15,000
Less gain on sale of land (together with unharvested crop) used in the business and held for more than 6 months (land and crop sold in one transaction)	12,500
Net loss	\$ 2,500
The net loss of \$2,500 is fully deductible. (A) True (B) False	

16. A certain corporation has properties the fair market value of which is considerably in excess of their adjusted tax basis. In July 1957 the corporation adopts a plan for complete liquidation, sells its properties in January 1958 and makes a distribution to its stockholders in June 1958 of all of its assets except certain assets retained to meet claims. The corporation pays a tax on the capital gain resulting from the sale of its property. (A) True (B) False

17. P receives non-taxable stock rights in connection with certain stock owned by him. On the date of issuance of the rights, the stock is quoted ex-rights at \$22.25 per share

and the rights are quoted at \$2.75. He is required to allocate a portion of the basis of his stock to the rights. (A) True (B) False

18. A corporation with a deficit of \$100,000 at December 31, 1957 has earnings of \$40,000 in the calendar year 1958. On December 31, 1958 it makes a distribution of \$20,000. The distribution is a taxable dividend to the stockholders. (A) True (B) False

19. In 1958 Q collects an account which he charged off and deducted as a business bad debt in 1951. Assuming that the deduction did not result in a reduction of tax in the year charged off or in any year to which a loss for that year might be carried, the recovery in 1958 may be excluded from income. (A) True (B) False

20. A corporation declares a dividend on its common stock payable either in cash or common stock at the election of the stockholders. If the stockholder elects to take stock, the dividend is nontaxable. (A) True (B) False

21. Taxpayer is 50 years old, single, and has good vision. He maintains a home for himself and his boyhood music teacher—a man now 76 years old, in poor health, who is not related to the taxpayer. Taxpayer has contributed more than half toward the support of this friend, whose only income was rental (gross) \$400 for the year.

On his tax return long-form 1040 taxpayer is entitled to deduct for personal exemptions an amount of: (A) \$600; (B) \$1,000; (C) \$1,200; (D) \$1,800; (E) Some other amount.

22. Taxpayer bought 100 shares of Acme Preferred stock for \$10,000 on January 1, 1951. On July 1, 1958 he received a taxable stock dividend of 10 shares of Acme common stock—par \$50 per share; market value \$60 per share. On October 1, 1958 he sold the ten Acme common shares for \$75 per share. He should report a taxable gain on the sale in amount of: (A) \$150; (B) \$250; (C) \$600; (D) \$750; (E) Some other amount.

23. The above gain should be reported as: (A) Long-term capital gain; (B) Short-term capital gain; (C) Ordinary income.

24. Taxpayer bought 100 shares of Columbia Preferred stock for \$10,000 on January 1, 1951. On July 1, 1958 he received a non-taxable stock dividend of 10 Preferred shares on the 100 shares purchased January 1, 1951. The stock was quoted on July 1, 1958 at \$124 per share. On October 1, 1958 he sold the ten Columbia Preferred shares at \$130 per share.

He should report a gain on the sale of the ten Preferred shares in the amount of: (A) \$330.91; (B) \$390.91; (C) \$1,240; (D) \$1,300; (E) Some other amount.

25. The above gain should be reported as: (A) Ordinary income; (B) Short-term capital gain; (C) Long-term capital gain.

## Number 2

The law firm of Shroyer, Curry and Jones has decided to dissolve partnership as of June 30, 1958 and has called you in to render an accounting. The only records maintained are the check book and a daily record of cash received. The firm has been in existence for four years with equal capital investments and profits are divided equally. The prior year's tax return indicates that the following expenditures had been capitalized for tax purposes prior to January 1, 1958:

	Asset	Allowance January 1, 1958
Office Furniture and Fixtures.....	\$1,500	\$ 450
Books.....	900	180
Automobile—Shroyer.....	2,000	600
Automobile—Curry.....	1,000	200
Automobile—Jones.....	3,000	600
	<u>\$8,400</u>	<u>\$2,030</u>

Cash receipts to June 30, 1958 amount to \$60,000. A summary of cash disbursements follows:

Rent.....	\$ 1,400
Wages and Salaries.....	2,102
Entertainment.....	4,000
Automobile and Miscellaneous.....	1,000
Withdrawals—Shroyer.....	9,000
Withdrawals—Curry.....	10,000
Withdrawals—Jones.....	12,000
	<u>\$39,502</u>

The capital accounts of the partners as of January 1, 1958 were equal. Depreciation has been charged against partnership profits. Automobiles are depreciated over a five year period and office furniture and fixtures and books over a ten year period. The bank balance at June 30, 1958 is \$29,998. The three partners have agreed to distribute the office furniture and fixtures in kind and they feel that the distribution will be equal. The automobiles, which were purchased from partnership funds, will be retained by the partners to whom they have been assigned. The books will be distributed to Shroyer.

*Required:*

A schedule of changes in partners' capital accounts from January 1, 1958 to June 30, 1958 and the final cash distribution to each partner.

## Number 3

*Required:*

From the data below prepare:

- A worksheet for a consolidated balance sheet as of December 31, 1958.
- A consolidated balance sheet as of December 31, 1958.

## 1. Post-closing trial balances as of December 31, 1958:

	Company P	Company S-1	Company S-2
Investment in Company S-1 (Acquired January 1, 1957)			
Common Stock (90%)	\$200,000		
Preferred Stock (40%)	40,000		
Investment in Company S-2 (70% Acquired January 1, 1958)	59,300		
Current Assets	50,000	\$ 50,000	\$40,000
Machinery & Equipment	40,000	20,000	30,000
Allowance for Depreciation—Machinery & Equipment	(20,000)	(15,000)	(10,000)
Bonds of Company S-2 (Par \$10,000)	10,000		
All Other Assets	600	313,000	70,180
Current Liabilities	(20,000)	(20,000)	(20,000)
Bonds Payable—10 yrs., 4%, due December 31, 1963			(30,000)
Premium on Bonds Payable			(180)
Capital Stock—Common, Par \$100	(300,000)	(250,000)	(60,000)
Capital Stock—Preferred, 5%, Par \$100, Cumulative & Non-Participating		(100,000)	
Premium on Preferred Stock		(10,000)	
Retained Earnings	(60,000)	12,000	(20,000)
	<u>—0—</u>	<u>—0—</u>	<u>—0—</u>

## 2. The investment accounts are carried at cost.

3. At acquisition, dividends on Preferred Stock for 1955 and 1956 were in arrears. Preferred Stock has a liquidation value of par plus all dividends in arrears and is non-voting.

4. On January 1, 1958, Company S-1 declared a common stock dividend of \$50,000 from Premium on Preferred Stock.

## 5. The Retained Earnings accounts showed the following:

	S-1	S-2
January 1, 1957 Balance	\$(10,000)	\$14,000
Profits 1957	7,000	7,000
Cash dividends 1958—on January 1, 1958	(5,000)	
—on December 31, 1958		(6,000)
Profit & Loss 1958	(4,000)	5,000
Balance December 31, 1958	(12,000)	20,000

6. Inventory of Company P includes \$5,000 merchandise purchased from S-2; cost to S-2 is marked up 25%.

7. Inventory of Company S-2 includes \$2,000 merchandise purchased from S-1; markup by S-1 is 10% on selling price.

8. Current Liabilities include the following: Company S-1 owes Company P \$1,000; Company S-2 owes Company P \$2,000; Company S-1 owes Company S-2 \$3,000; and Company P owes Company S-1 \$2,000.

9. Machinery having a life of 10 years was purchased by Company P from Company S-1 on January 1, 1957 for \$10,000. Cost to S-1 was \$7,000.

10. Company S-2 neglected to amortize Premium on Bonds Payable for 1958.

## Number 4

The MCB Corporation produces one principal product designated "Main-Line." Incidental to this production two additional products result—"Co-Line" and "By-Line." Material is started in process #1; the three products come out of this process.

"Main-Line" is processed further through process #2; "Co-Line" is processed further through process #3; while "By-Line" is sold without further processing. The following data for February are available:

1. Material put in process #1, \$12,000.
2. Conversion costs: Process #1, \$8,000; Process #2, \$4,000; Process #3, \$300.
3. There were no beginning or ending in-process inventories.
4. Production and Sales data:

	Quantity Produced	Quantity Sold	February Average Sales Price	Market Price End of February
Main-Line.....	5,000	4,000	\$6.00	\$6.00
Co-Line.....	3,000	2,000	1.00	.90
By-Line.....	1,000	900	.50	.55

5. Selling and Administrative Expenses are related to the quantity sold. It is estimated that next period selling and administrative costs will be the same as February actual.

Main-Line.....	\$2,000
Co-Line.....	800
By-Line.....	36

6. Standard net profit on Co-Line is 10% of sales.
7. No profit or loss is realized on By-Line sales.

**Required:**

- a. Compute the value of the By-Line inventory and the costs transferred from Process #1 to By-Line units during the period.
- b. Compute the value of the Co-Line inventory and the costs transferred from Process #1 to Co-Line units during the period.
- c. Copy and complete the following entries:
  1. Process 1  
    Process 2  
    Process 3  
    Raw Material & Various
  2. Process 2  
    Process 3  
    By-Line Inventory  
    Process 1
  3. Finished Goods—Main-Line  
    Process 2
  4. Finished Goods—Co-Line  
    Process 3
  5. Cash  
    Sales—Main Line  
    Cost of Goods Sold—Main-Line  
    Finished Goods—Main-Line
  6. Cash  
    Sales—Co-Line  
    Cost of Goods Sold—Co-Line  
    Finished Goods—Co-Line

## 7. Cash

## By-Line Inventory

## Selling &amp; Administrative Expenses

d. Copy and complete the following Income Statement:

	Main-Line	Co-Line	By-Line	Total
Sales.....				
Cost of Goods Sold.....				
Gross Profit.....				
Selling & Administrative Expenses.....				
Net Profit.....				

## Number 5

From the following information concerning the City of Langdon, you are to prepare as of December 31, 1958:

a. A worksheet reflecting the transactions, closing entries and balance sheet for its general fund.

b. A statement of operations for its working capital fund.

c. A balance sheet for its working capital fund.

The accounts of the general fund as of January 1, 1958 were as follows:

Cash.....	\$1,000
Taxes Receivable—Delinquent.....	8,000
Accounts Payable.....	7,000
Reserve for Encumbrances.....	1,500
Unappropriated Surplus.....	500

The following transactions for the current year are to be considered:

1. The budget which was adopted for 1958 provided for taxes of \$275,000, special assessments of \$100,000, fees of \$15,000, and license revenues of \$10,000. Appropriations were \$290,000 for general fund operations, and \$100,000 for the purpose of establishing a working capital fund.

2. All taxes and special assessments became receivable.

3. Cash receipts for the general fund included:

Taxes from 1958.....	\$260,000
Special assessments.....	100,000
Fees.....	16,000
Licenses.....	9,500
Taxes Receivable—Delinquent plus interest of \$500. Tax liens were obtained on the remainder of the delinquent taxes.....	5,500

4. Contracts amounting to \$75,000 were let by the general fund.

5. Services rendered by the working capital fund to other departments included: General fund, \$40,000; Utility fund, \$20,000 of which \$5,000 remained uncollected at the end of the year.

6. The following cash disbursements were made by the general fund:

Working capital fund.....	\$100,000
Accounts payable of the preceding year.....	7,000
Outstanding orders at beginning of year were all received and paid for.....	2,000
Expenses of fund incurred during year.....	145,000
Stores purchased for central storeroom established during year.....	5,000
Contracts let during year.....	30,000
Permanent advance to newly created petty cash fund.....	1,000
Services performed by working capital fund.....	35,000
Salaries paid during year.....	30,000

## 7. The following cash disbursements were made by the working capital fund:

Purchase of equipment (Estimated useful life 10 yrs.)	\$60,000
Purchase of materials and supplies of which $\frac{1}{2}$ remained at end of year	40,000
Salaries and wages as follows:	
Direct labor	9,000
Office salaries	2,000
Superintendent's salary	4,000
Heat, Light & Power	2,000
Office expenses	500

## 8. All unpaid taxes become delinquent.

## 9. Stores inventory in general fund amounted to \$2,000 on December 31, 1958.

## Solution to Problem 1

1. B	6. A	11. A	16. B	21. C
2. B	7. B	12. A	17. B	22. A
3. A	8. B	13. A	18. A	23. B
4. B	9. B	14. B	19. A	24. B
5. A	10. B	15. A	20. B	25. C

## Solution to Problem 2

SHROYER, CURRY AND JONES  
JUNE 30, 1958

## Partners' capital accounts at January 1, 1958:

Cash at January 1, 1958:		
Cash in bank, June 30, 1958	\$29,998	
Cash disbursements from Jan. 1 to June 30, 1958	39,502	
Total	\$69,500	
Cash receipts to June 30, 1958	60,000	\$ 9,500
Net assets other than cash at January 1, 1958		6,370
Total assets at January 1, 1958		\$15,870

## Partners' accounts:

Shroyer	\$ 5,200
Curry	5,200
Jones	5,200
Total capital accounts at January 1, 1958	\$15,870

## Partnership net income:

Cash receipts to June 30, 1958	\$60,000
Cash disbursements for partnership expenses	\$ 8,502
Allowance for depreciation on:	
Furniture and fixtures	75
Books	45
Automobile—Shroyer	200
Automobile—Curry	100
Automobile—Jones	300
Total expenses	9,225
Net income from January 1, 1958 to June 30, 1958	\$50,773

Net values of partnership assets at June 30, 1958:

	Cost	Allowance for De- preciation	Net Value	
Furniture and fixtures.....	\$ 1,500	\$ 525	\$ 975	
Books.....	900	225	675	
Automobile—Shroyer.....	2,000	800	1,200	
Automobile—Curry.....	1,000	300	700	
Automobile—Jones.....	3,000	900	2,100	
Schedule of changes in partners' accounts and distribution of cash:				
Capital accounts, Jan. 1, 1958.....	Total \$15,870	Shroyer \$ 5,290	Curry \$ 5,290	Jones \$ 5,290
Net income to June 30, 1958.....	50,778	16,926	16,926	16,926
Total.....	\$66,648	\$22,216	\$22,216	\$22,216
Partners' withdrawals.....	\$31,000	\$ 9,000	\$10,000	\$12,000
Distribution of assets other than cash:				
Furniture and fixtures.....	975	325	325	325
Books.....	675	675		
Automobiles.....	4,000	1,200	700	2,100
Total.....	\$36,500	\$11,200	\$11,025	\$14,425
Capital accounts at June 30, 1958 prior to distribution of cash.....	\$29,998	\$11,016	\$11,191	\$ 7,791
Distribution of cash.....	29,998	11,016	11,191	7,791

## Solution to Problem 3

**COMPANY P AND SUBSIDIARIES**  
**WORKING PAPERS—CONSOLIDATED BALANCE SHEET**  
**DECEMBER 31, 1958**

	Company P	Company S-1	Company S-2	Adjustments and Eliminations			
				Debit	Credit		
Investment in Company S-1:							
Common stock (90%).....	\$200,000				(9) \$207,360		
Preferred stock (40%).....	40,000			(7) \$ 2,000	(7) 53,640	\$ 61,000	C.S.
Investment in Company S-2 (70%).....	59,300				(8) 46,000	4,000	C.S.
					(12) 55,321		
Current assets.....	50,000	\$ 50,000	\$ 40,000		(11) 1,379	2,600	G.W.
Machinery and equipment.....	40,000	20,000	30,000		(3) 8,000	132,000	
Bonds of Company S-2 (Par \$10,000).....	10,100				(4) 3,000	87,000	
All other assets.....	600	313,000	70,180		(6) 10,100	383,780	
	<u>\$400,000</u>	<u>\$383,000</u>	<u>\$140,180</u>			<u>\$540,380</u>	
Current liabilities.....	\$ 20,000	\$ 20,000	\$ 20,000	(3) 8,000		\$ 52,000	
Allowance for depreciation.....	20,000	15,000	10,000	(4) 600		44,400	
Bonds payable.....			30,000	(5) 10,000		20,000	
Premium on bonds payable.....			180	(6) 50		100	
				(5) 30			
Capital stock—Common.....							
Company P.....	300,000					300,000	
Company S-1.....		250,000		(9) 225,000		25,000	M
Company S-2.....			60,000	(11) 42,000		18,000	M
Capital stock—Preferred.....		100,000		(8) 40,000	(10) 9,000	69,000	M
Premium on Preferred stock.....		10,000		(9) 9,000		1,000	M
Retained earnings.....							
Company P.....	60,000			(11) 1,379		6,931	S
				(7) 51,640			
				(6) 30			
Company S-1.....		(12,000)		(10) 9,000	(9) 26,640	(2,960)	M
				(4) 2,400			
				(2) 200			
				(8) 6,000			
Company S-2.....			20,000	(1) 1,000	(5) 30	5,709	M
				(11) 13,321			
	<u>\$400,000</u>	<u>\$383,000</u>	<u>\$140,180</u>				
Reserve for inter-company profit in inventories.....					(2) 200		
					(1) 1,000	1,200	
				<u>\$421,670</u>	<u>\$421,670</u>	<u>\$540,380</u>	

## EXPLANATION OF ADJUSTMENTS AND ELIMINATIONS

- 1 and 2 To provide for inter-company profit in inventories.  
 3 To eliminate inter-company receivables and payables.  
 4 To adjust accounts for inter-company sale of machinery. The purpose of this adjustment is to state the asset and related allowance accounts as they would have been had the inter-company transaction not taken place.

	In Hands of Co. P	In Hands of Co. S-1
Asset.....	\$10,000	\$7,000
Depreciation:		
1957.....	\$ 1,000	\$ 700
1958.....	1,000	700
	<u>\$ 2,000</u>	<u>\$1,400</u>
Net book value.....	<u>\$ 8,000</u>	<u>\$5,600</u>

The adjustment is:

Dr. Retained earnings Co. S-1.....	\$2,400
Dr. Allowance for depreciation.....	600
Cr. Machinery.....	\$3,000

The difference between the above debit of \$2,400.00 to retained earnings and the original credit of \$3,000.00 is the portion of the profit on sale that may be properly recognized. This profit is the difference between the depreciation charged by P and the depreciation that would have been charged by S-1. To amortize the bond premium for 1958.

To eliminate the investment in S-2 bonds and the related liability and premium accounts. The premium carried in the investment account which was in excess of the related premium liability, \$50.00 was charged to P Company retained earnings.

To adjust the investment in S-1 stock to reflect the changes since date of acquisition:

	Preferred Stock	Common Stock
<i>December 31, 1958</i>		
Capital stock.....	\$100,000	\$250,000
Dividends in arrears for three years.....	15,000	
Deficit applicable to Common stock		
Per books.....	\$12,000	
Adjustments 2 and 4.....	2,600	
Dividends in arrears on Preferred stock.....	15,000	
	<u>\$29,600</u>	
Less premium on Preferred stock.....	10,000	19,600
Book values at 12-31-58.....	<u>\$115,000</u>	<u>\$230,400</u>
<i>January 1, 1957</i>		
Capital stock.....	\$100,000	\$250,000
Dividends in arrears for two years.....	10,000	
Premium on Preferred stock.....	<u>\$60,000</u>	
Less: Deficit per books.....	\$10,000	
Dividends in arrears for two years.....	10,000	
	<u>\$20,000</u>	
Applicable to Common stock.....	<u>\$40,000</u>	40,000
Book values at 1-1-57.....	<u>\$110,000</u>	<u>\$290,000</u>
Increase in book value.....	<u>\$ 5,000</u>	
Decrease in book value.....		<u>\$ 59,600</u>
Company P's share of increase—40%.....	<u>\$ 2,000</u>	
Company P's share of decrease—90%.....		<u>\$ 53,600</u>

8	To eliminate 40% of the S-1 Preferred stock book value.	
9	To eliminate 90% of the S-1 Common stock book value.	
10	To transfer to the Preferred stock account the minority interest in the dividends in arrears (60% of \$15,000.00).	
11	To adjust the investment in S-2 for the decrease in book value since acquisition:	
	Book value at 1-1-58.....	\$ 81,000
	Per books.....	\$ 80,000
	Less adjustment 1.....	1,000
		\$ 79,000
	Add adjustment 5.....	30
		79,030
	Decrease in book value.....	\$ 1,970
	P Company's share of the decrease—70%.....	\$ 1,379
12	To eliminate 70% of the S-2 book value of \$79,030.00 or \$55,321.00.	

**COMPANY P AND SUBSIDIARIES**  
**CONSOLIDATED BALANCE SHEET**  
**DECEMBER 31, 1958**

**ASSETS**

Current assets.....	\$130,800
Machinery and equipment, less allowance for depreciation, \$44,400.....	42,600
Other assets.....	383,780
Goodwill.....	2,600
	<u>\$559,780</u>

**LIABILITIES**

Current liabilities.....	\$ 52,000
Bonds payable, less treasury bonds \$10,000.....	\$ 20,000
Premium on bonds.....	100
Minority interests:	
Company S-1.....	\$ 92,040
Company S-2.....	23,709
	115,749
Capital stock and surplus:	
Capital stock, par value \$100 per share.....	\$300,000
Retained earnings.....	6,931
Surplus from consolidation.....	65,000
	<u>\$71,931</u>
	<u>\$559,780</u>

**Solution to Problem 4**

**M C B CORPORATION**  
**MONTH OF FEBRUARY**

(a) and (b)

Process #1 production costs:	
Material.....	\$12,000
Conversion cost.....	8,000
Total.....	<u>\$20,000</u>
Costs transferred to By-Line units:	
1000 units @ \$.50.....	\$500
Less applicable selling and administrative costs.....	40
	460
Production costs applicable to Main Line and Co-Line production.....	<u>\$19,540</u>

Allocation of costs:

	Units Produced	Average Sales Value	Ratio to Total Average Value	Allocated Costs
Main-Line.....	5,000	\$30,000	10/11	\$17,764
Co-Line.....	3,000	3,000	1/11	1,776
		<u>\$33,000</u>		<u>\$19,540</u>

# Valuation of Inventories:

	Units	Unit Cost	Amount
By-Line inventory:			
Transferred from process #1 .....	1,000	\$.46	\$ 460
Sold in February .....	900	.46	414
Inventory at end of February .....	100		\$ 46

(No adjustment to reduce to market necessary since the allocated cost above was less than market price at the end of the month.)

Co-Line inventory:			
Transferred from process #1 .....	3,000		\$1,776
Process #3 costs .....			300
Total .....	3,000	\$.692	\$2,076
Sold in February .....	2,000	.692	1,384
Remainder .....	1,000	.692	\$ 692
Reduction to market (see below) .....		(.282)	282
	1,000	\$.41	\$ 410

## Calculation of reduction to market:

Unit price at end of February .....	\$ .90
Standard net profit on product .....	.09
Remainder .....	\$.81
Selling and administrative costs ( $\$800 \div 2,000$ ) .....	.40
Maximum valuation per unit .....	\$.41
Valuation per unit before adjustment .....	.692
Amount of adjustment .....	\$(.282)

(c)

1. Process 1 .....	\$20,000	
Process 2 .....	4,000	
Process 3 .....	300	
Raw material and various .....		\$24,300
2. Process 2 .....	17,764	
Process 3 .....	1,776	
By-Line inventory .....	460	
Process 1 .....		20,000
3. Finished goods—Main-Line .....	21,764	
Process 2 .....		21,764
4. Finished goods—Co-Line .....	2,076	
Process 3 .....		2,076
5. Cash .....	24,000	
Sales—Main-Line .....		24,000
Cost of goods sold—Main-Line .....	17,411	
Finished goods—Main-Line .....		17,411
To charge to cost of sales cost of Main-Line sold:		
Total cost of units produced .....	\$21,764	
Number of units produced .....	5,000	
Units sold (80% of 5,000 or 4,000) .....		
Cost of sales ( $4,000 \times \$4.342$ ) .....	17,411	
6. Cash .....	2,000	
Sales—Co-Line .....		2,000
Cost of goods sold—Co-Line .....	1,384	
Finished goods—Co-Line .....		1,384
7. Cash .....	450	
By-Line inventory .....		414
Selling and administrative expense .....		36

(d)

	Main-Line	Co-Line	By-Line	Total
Sales .....	\$24,000	\$ 2,000	\$ 450	\$26,450
Cost of goods sold .....	17,411	1,384	414	19,209
Gross profit .....	\$ 6,589	\$ 616	\$ 36	\$ 7,241
Selling and administrative expenses .....	2,000	800	36	2,836
Net profit (loss) .....	\$ 4,589	\$ (184)	—0—	\$ 4,405

Solution

(a)

Cash .....

Petty cash fund  
Stores inventory  
Tax liens .....

Taxes receivable  
Special assessments  
Estimated revenue  
Estimated assets  
Estimated other

Accounts payable  
Accruals

Due to Work  
Reserve for

Appropriation  
Appropriation

Unappropriated  
Estimated budget  
Revenue for  
Miscellaneous

Explanation of

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## Solution to Problem 5

(a)

CITY OF LANGDON  
WORKING PAPERS  
DECEMBER 31, 1958

	Trial Balance January 1, 1958		Transactions		Closing Entries		Balance Sheet
	Debit	Credit	Debit	Credit	Debit	Credit	
Cash.....	\$1,000		(3) \$ 391,000	(6) \$ 100,000 (6) 145,000 (6) 5,000 (6) 30,000 (6) 30,000 (6) 7,000 (8) 2,000 (9) 1,000 (10) 35,000			\$37,000
Petty cash fund.....			(9) 1,000				1,000
Stores inventory.....			(13) 2,000				2,000
Tax liens.....			(11) 3,000				3,000
Taxes receivable-current.....			(2) 275,000	(12) 15,000			
Taxes receivable—delinquent.....	8,000		(12) 15,000	(11) 3,000			15,000
Special assessment receivable.....			(2) 100,000	(3) 100,000			
Estimated revenue from taxes.....			(1) 275,000	(2) 275,000			
Estimated assessments.....			(1) 100,000	(2) 100,000			
Estimated other revenues.....			(1) 25,000	(3) 25,500	(a) \$ 500		
							<u>\$58,000</u>
Accounts payable.....	\$7,000		(7) 7,000				
Encumbrances.....			(4) 75,000	(15) 45,000			
Due to Working Capital Fund.....			(10) 35,000	(5) 30,000			\$ 5,000
Reserve for encumbrances.....	1,500		(8) 1,500	(4) 75,000			45,000
Appropriations.....			(14) 30,000	(1) 390,000	(b) 395,000	(c) \$ 5,000	
Appropriation expenditures.....			(15) 45,000			(b) 395,000	
			(5) 40,000				
			(6) 310,000				
Unappropriated surplus.....	500			(1) 10,000	(d) 5,500	(d) 5,500	6,000
Estimated budget surplus.....					(c) 5,000	(a) 500	
Revenue for stores inventory.....				(13) 2,000			2,000
Miscellaneous revenue and expense			(8) 500	(3) 500			
	<u>\$9,000</u>	<u>\$9,000</u>	<u>\$1,731,000</u>	<u>\$1,731,000</u>	<u>\$406,000</u>	<u>\$406,000</u>	<u>\$58,000</u>

## Explanation of Transactions and Adjustments

- To record estimated revenues and appropriations.
- To record receivables.
- To record cash receipts.
- To record contracts awarded.
- To record liability to Working Capital Fund.
- To record cash disbursed for appropriation expenditures.
- To record payment of accounts payable of preceding year.
- To record payment of orders and contracts outstanding at 1-1-58.
- To establish petty cash fund.
- To record payment to Working Capital Fund.
- To set up tax liens.
- To reclassify uncollected current taxes.
- To set up stores inventory.
- To reduce encumbrance and reserve accounts for payments made.
- To charge appropriation expenditures for outstanding orders and contracts.
- (a) To close excess of actual revenue over estimated revenues to budget surplus account.
- (b) To close appropriation expenditure to appropriations account.
- (c) To charge budget surplus with excess of appropriation expenditures over appropriations.
- (d) To close budget surplus account.

(b)

CITY OF LANGDON  
WORKING CAPITAL FUND—STATEMENT OF OPERATIONS  
FOR THE YEAR 1958

Services rendered.....	\$ 60,000
Costs:	
Depreciation (half year).....	\$ 3,000
Supplies used.....	32,000
Salaries and wages.....	15,000
Heat, light and power.....	2,000
Office expense.....	500
	<u>\$ 52,500</u>
Net Income.....	<u>\$ 7,500</u>

(c)

CITY OF LANGDON  
WORKING CAPITAL FUND—BALANCE SHEET  
DECEMBER 31, 1958

	<b>ASSETS</b>	
Cash.....	\$ 32,500	
Due from General Fund.....	5,000	
Due from Utility Fund.....	5,000	
Inventory of supplies.....	8,000	
Equipment, less depreciation, \$3,000.....	57,000	
	<u>\$107,500</u>	
		<b>CAPITAL</b>
Advance from General Fund.....	\$100,000	
Net income for 1958.....	7,500	
	<u>\$107,500</u>	

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## EXAMINATION IN AUDITING

WALTER B. MEIGS

**T**HE auditing section of the May, 1959 Uniform C.P.A. Examination was given May 14, 1959 from 8:30 A.M. to 12 noon, and included two groups of questions as follows:

	<i>Estimated Minutes</i>	
	<i>Minimum</i>	<i>Maximum</i>
Group I (All required):		
No. 1.....	20	30
No. 2.....	20	30
No. 3.....	20	30
No. 4.....	20	30
Total for Group I.....	80	120
Group II (Three required).....	60	90
Total for examination.....	140	210

The above time estimates are approximately proportional to the point values of the problems; the total points for this part of the examination are 100, and a grade of 75% is the minimum passing grade.

### *Number 1 (Estimated time— 20 to 30 minutes)*

On the answer sheet provided you are to enter an "X" in the proper column for each of the 50 items.

- a. The following conditions have been officially or generally recognized as bringing the independence of an "independent" certified public accountant into question.
  1. Ownership of 1% of a client corporation's outstanding stock.
  2. Ownership of such stock amounting to 1% of accountant's personal fortune.
  3. Membership on client's board of directors.
  4. Service on Community Chest Board with president of client corporation.
  5. Authorship of articles describing auditing problems in industry of

which your client is an important part. Knowledge of the industry was obtained while serving as auditor for a former client who is in competition with your present client.

6. Occupancy of important administrative post in subsidiary corporation with close financial affiliation with your client.
7. Accounting practice consists largely or wholly of client and its subsidiaries.
- b. The following practices are generally considered to be unethical by certified public accountants.
  8. Employment of a former employee of a fellow practitioner.
  9. Use of a 3"X5" "card" in a newspaper announcing a change of address.
  10. Solicitation through the mail of a firm known not to have an accountant. There is no personal relationship between the accountant and the addressee.
  11. Solicitation through the mail of a known client of another practitioner, but in connection with a type of work the other practitioner has positively stated he will not perform.
  12. Use of the sub-head on letterheads reading "Members of State Society of CPAs" when all members of the accounting firm are members of the professional organization.
  13. Allowance of 2½% share of fees from work referred by a local banker.
  14. Disclosure to a close personal friend of the earnings of a client corporation as shown on a report to be

published in the near future.

- ✓ 15. Disclosure to a friend who is a stockholder of the corporation you audited that the book values of fixed assets are considerably less than the appraised values. This specific information appeared in the financial statement published last month.
- c. Each of the following procedures would detect "kiting" between bank accounts to cover a cash shortage on the balance sheet date.
  - ✓ 16. Correspondence with banks by which bank balance shown on books at balance sheet date was confirmed.
  - ✓ 17. Correspondence with banks in order to confirm deposits, and comparison of deposit slips with bank's records, for last month prior to balance sheet date.
  18. Reconciliation of all bank accounts fifteen days after balance sheet date.
- d. The following procedures are ordinarily essential to the issuance of an unqualified opinion on financial statements when material amounts are involved.
  19. Reconciliation of all bank accounts of material amounts to the balance sheet date.
  20. Count of all cash on hand at balance sheet date.
  - ✓ 21. Confirmation of all receivables by direct communication at some date during the year under audit.
  22. Physical examination of a substantial part of stocks and bonds in safety deposit vaults.
  23. Observation of the physical count of a fair sample of inventory.
  24. On first audit of client corporation six years after organization investigation as to whether fixed assets were originally acquired for cash, stock, or other assets.
  25. Examination of fire insurance policies which are in effect.
  26. Determination of "market" value of high valued items in stock-in-trade.
  - ✓ 27. Determination of replacement cost of important items in fixed assets.
  - ✓ 28. Direct confirmation by correspondence of all current liabilities.
  29. Direct confirmation of outstanding preferred stock by correspondence with a registrar and transfer agent, where records are kept by such person(s).
  30. Direct confirmation by correspondence from New York Stock Exchange of market value of listed stock on balance sheet date.
- e. The following phrases and statements refer to matters as to which auditors are generally in agreement.
  31. That management services should be performed by an independent CPA as a part of his regular practice.
  - ✓ 32. Quotation and collection of a fee contingent on the results obtained in a federal income tax case is considered to be unethical.
  - ✓ 33. Unsigned financial statements on plain paper may be used.
  - ✓ 34. Deduction of net mark-downs below the cost-retail computation line in retail method inventories.
  35. Investigate internal control procedures by testing and sampling transactions.
  - ✓ 36. Inclusion of discount on bonds payable among the assets of a company.
  - ✓ 37. Inclusion of inventories of office supplies under a non-current asset heading.
  38. Use of the term "retained earnings" as the equivalent of "earned surplus."
  39. There should be no qualification of

the short-form report when receivables from the government in substantial amount cannot be confirmed by direct communication but other procedures reveal the validity of the claim.

40. Inclusion in consolidated surplus of the parent's share of subsidiary's undistributed net earnings, so labeled, since date of acquisition of subsidiary's stock by parent.
41. Depreciation should not necessarily be the same for both income tax and financial statement purposes.
42. Practically all methods of valuing inventory in the balance sheet, except cost, are subject to the general rule of "lower of cost or market."
43. When a business combination is deemed to be a pooling of interest, a new basis of accountability does not arise.
44. Disclosing "market" values of investment securities owned, shown at cost on the balance sheet, where there is a substantial difference.
45. The independent auditor can accept work performed by internal audit staff, when a high degree of internal control is in evidence.
- f. The following statements pertain to the opinion rendered by an independent certified public accountant.
46. A certificate unqualified in the opinion paragraph should be rendered when you did not confirm receivables from governmental agencies if these receivables constituted 25% of current assets and 12% of total assets, but you did satisfy yourself regarding their validity by some alternative pro-

cedure.

47. An unqualified opinion should be rendered if during the year the client changed the method of computing depreciation on new additions from the straight-line method to the sum-of-the-digits method; the effect on net income for the year was material. The change was explained by means of a footnote.
48. You should disclaim an opinion if the engagement was undertaken after the balance sheet date, because on the balance sheet date the client had not taken its physical inventory of a material amount. You were, therefore, unable to witness the physical inventory. Your other procedures were limited to tests of prices, extensions and footings. These disclosed only insignificant differences from the book figures for inventory.
49. You should qualify as to consistency in the opinion paragraph if at the beginning of the year the company changed the basis of computing the cost of its principal raw material from the average cost basis to the last-in, first-out basis; as a result income for the year was reduced 50%.
50. You should render a qualified opinion if under the terms of the engagement, you did not witness the physical inventory, but were given a copy of the client's counts, certified by the president; this was tested and found to be substantially correct; the inventory constituted 35% of current assets and 20% of total assets.

## Answer 1

	Yes	No
a. 1.	X	
2.	X	
3.	X	
4.		X
5.		X
6.	X	
7.		X
b. 8.		X
9.		X
10.	X	
11.	X	
12.		X
13.	X	
14.	X	
15.		X
c. 16.		X
17.		X
18.	X	
d. 19.	X	
20.	X	
21.		X
22.	X	
23.	X	
24.	X	
25.	X	

Yes No

26.	X	
27.		X
28.		X
29.	X	
30.		X
e. 31.		X
32.		X
33.		X
34.		X
35.	X	
36.		X
37.		X
38.	X	
39.	X	
40.	X	
41.	X	
42.		X
43.	X	
44.	X	
45.	X	
f. 46.	X	
47.		X
48.	X	
49.	X	
50.		X

## Number 2 (Estimated time—20 to 30 minutes)

Column Number	Column Heading
1	Description of Security (name, maturity, rate, etc.)
2	Balance at Beginning of Year
3	Face value or number of shares
4	Cost or book value
5	Additions during Period
6	Date
7	Face value or number of shares
8	Cost
9	Deductions during Period
10	Date
11	Face value or number of shares
12	Cost or book value
13	Proceeds on Disposals (net)
14	Profit or (loss) on Disposals
15	Balance at End of Year
16	Face value or number of shares
17	Cost or book value
18	Market value
19	Interest and Dividends
20	Accrued at beginning of year
21	Purchased
22	Earned
23	Received
24	Accrued at end of year

## Required:

Draw a line down the middle of a lined sheet(s) of paper.

a. On the left of the line, state the specific source(s) of information to be entered in each column, and where required, how the data of previous columns are combined.

b. On the right of the line, state the principal way(s) that such information would be verified.

## Answer

Column Number

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2
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## Answer 2

Column Number	Sources of Information	Ways of Verifying Information
1	Previous year's audit working papers for securities on hand at beginning of year.	Information on prior year's audit working papers requires no verification.
2	Brokers' advices and monthly statements from brokers for securities acquired during year.	Inspect securities on hand or in safe deposit box, confirm those pledged or in possession of broker.
3	Previous year's working papers.	For securities still owned at year end, verify by inspection or confirmation.
4	Ledger account.	Compare amount in previous year's working papers with beginning balance in ledger account.
5	Ledger account.	Broker's advices and monthly statements.
6	Ledger account.	Broker's advices and monthly statements.
7	Ledger account.	Broker's advices and monthly statements.
8	Ledger account.	Broker's advices and monthly statements.
9	Ledger account. Also see Columns 3 and 6 of current working papers.	Compare credits in ledger account with original cost as shown in Columns 3 and 6 of current working papers.
10	Broker's advices and monthly statements.	Trace to cash receipts or to account with broker.
11	Compute from data in Columns 9 and 10.	Compare with ledger account "Profit and Loss on Sale of Securities," and with journal entry for sale.
12	Compute by adding Column 2 to Column 5 and deducting Column 8.	Inspect securities on hand, confirm those held by others.
13	Compute by adding Columns 3 and 6 and deducting Column 9.	Compare total computed with balance in ledger account.
14	Stock market quotations in newspapers, inquiries from brokers.	No verification necessary unless quotation appears unreasonable. In this case, compare with quotations in other newspapers, and with quotations on previous day.
15	Previous year's audit working papers.	Compare with beginning balance in ledger account.
16	Ledger account.	Make independent quotation and compare with broker's advices.
17	Ledger accounts for interest and dividends earned. Also compute earnings based on amount of securities owned, dates held, and dividend or interest rates.	Compare with dividend record books published by investment service companies.
18	Ledger account.	Trace to cash receipts.
19	Compute by adding Columns 15, 16, and 17 and deducting Column 18.	Trace to ledger account. Also make computation based on securities owned, dates and rates of dividends and interest.

## Number 3 (Estimated time—20 to 30 minutes)

Your client, ABC Company, is contemplating changing its method of computing depreciation for federal income tax purposes for the calendar year 1958 from a straight-line method to the so-called "sum-of-the-years' digits" method. However, the company has not decided whether it will record on the books the increased depreciation provision. The company provides you with the following data:

Net taxable income before provision for depreciation.....	\$1,000,000
Provision for depreciation:	
Straight-line method.....	200,000
Sum-of-the-years' digits method.....	300,000
Amount of income taxes (not yet recorded):	
Based on \$700,000.....	358,500
Based on \$800,000.....	410,500

- a. If the sum-of-the-years' digits method for computing depreciation is claimed for federal income tax purposes but straight-line depreciation has been recorded, and will remain unchanged on

the books:

1. Give the journal entries, if any, relating to income taxes which should be recorded on the books.
  2. Prepare the qualifications, if any, which you would include in your audit report. (An opinion paragraph will meet this requirement.)
  3. Prepare the notes to financial statements, if any, which would be needed.
- b. If the sum-of-the-years' digits method for computing depreciation is claimed

for tax purposes and has been recorded on the books:

1. Give the journal entries, if any, relating to income taxes which should be recorded on the books.
2. Prepare the qualifications, if any, which you would include in your audit report. (An opinion paragraph will meet this requirement.)
3. Prepare the notes to financial statements, if any, which would be needed.

### Answer 3

- a. 1. Federal Income Tax Expense ..... \$410,500  
     Federal Income Tax Payable ..... \$358,500  
     Estimated Liability for Deferred Income Tax ..... \$52,000
- To record federal income tax expense based on net income of \$800,000 reflecting straight-line depreciation, and to set up a tax liability based on \$700,000 taxable income reflecting "sum-of-the-years' digits" method of depreciation. A separate estimated liability account is created for the amount of tax postponed through the use of increased depreciation for tax purposes.
- If the method illustrated above is considered not practicable in a given case, an alternative approach consists of recording only the amount of tax estimated as payable for the year, and disclosing in a footnote the effects of the use of different methods of measuring depreciation on the books and in the tax return.
2. No qualification is necessary. The standard short-form report may be used.
3. No notes required if entries shown above are made. If, as an alternative, the Company records only the amount of tax estimated as payable for the year, the following footnote to the financial statements would be needed.
- Note to Financial statements:  
 As of January 1, 1959 the Company changed its method of computing depreciation for federal income tax purposes for the straight-line method to the "sum-of-the-years' digits" method. In its accounting records and for all accounting purposes other than the computation of taxable income, the Company has continued to use straight-line depreciation. The effect of the change in depreciation methods for tax purposes was to decrease federal income tax payable for the year by \$52,000. The net income after taxes as shown in the income statement for 1958 is therefore \$52,000 greater than if increased depreciation had not been computed for tax purposes.
- b. 1. Federal Income Tax Expense ..... \$358,500  
     Federal Income Tax Payable ..... \$358,500
- To accrue federal income tax based on \$700,000 net income.
2. Opinion paragraph of audit report should be qualified as follows:  
 In our opinion the accompanying balance sheet and statements of income and retained earnings present fairly the financial position of ABC Company at December 31, 1958, and the results of its operations for the year then ended, in conformity with generally accepted accounting principles which, except for a change in method of computing depreciation described in Note 1 (a change which we approve), were applied on a basis consistent with that of the preceding year.
3. Note 1 to the financial statements:  
 The method of computing depreciation was changed by the Company as of January 1, 1958 from the straight-line method to the "sum-of-the-years' digits" method. Because of this change in depreciation methods, the net income after taxes for the year 1958 was reduced by \$48,000.

Answer 4 (See next page for question.)

**OVERSTATEMENT OF NET INCOME BY UNDERSTATEMENT OF EXPIRED COSTS AND EXPENSES OR LIABILITIES, OR OVERSTATEMENT OF ASSETS**

<i>Methods of Understatement or Overstatement</i>	<i>Audit Procedures Which Would Reveal Understatement or Overstatement</i>
<ol style="list-style-type: none"> <li>Overstatement of ending inventory by:               <ol style="list-style-type: none"> <li>Inclusion of year-end receipts and in-transit items for which no purchase liability has been recorded.</li> <li>Inclusion of items held on consignment from manufacturers.</li> <li>Use of excessive prices such as selling prices, or prices in excess of lower of cost or market.</li> <li>Failure to exclude obsolete items from inventory.</li> <li>Errors in extensions and overfooting of totals on inventory sheets.</li> </ol> </li> <li>Understatement of beginning inventory.</li> <li>Direct charges to retained earnings or appropriations of retained earnings of operating expenses or inventory write-downs.</li> <li>Recording as sales shipments of goods on consignment to retailers.</li> <li>Inclusion in sales of orders not shipped until following period.</li> <li>Inadequate provision for bad debt losses.</li> <li>Inadequate provision for depreciation.</li> <li>Improper deferral of expenses such as insurance, interest, taxes, rent, and advertising.</li> <li>Failure to make accruals for wages, interest, taxes, bonuses, commissions, and other expenses.</li> <li>Failure to record expenses and related liabilities for services received but not billed such as legal services, utilities, and repairs.</li> <li>Capitalization of expenditures which should be treated as expense of current period.</li> <li>Failure to record expenses and related liabilities arising from product guarantees, pension plans, and similar contractual commitments.</li> <li>Failure to record notes payable issued in payment for merchandise or services.</li> <li>Recording of fictitious sales, or making of large isolated errors in sales summaries.</li> <li>Understatement of cost of sales or expenses by reason of large isolated errors in summarizing cost and expense data.</li> </ol>	<ol style="list-style-type: none"> <li>Review the year-end cutoff of purchases by examination of purchase invoices, receiving reports, and voucher register.</li> <li>Inquire of officers whether any goods are held on consignment. Examine records of consigned goods on hand.</li> <li>Verify pricing of inventory by references to recent purchase invoices and current quotations by supplies. Compare inventory prices with selling prices.</li> <li>During physical count, inquire whether obsolete or damaged goods have been segregated. Compare quantities of selected items with volume of sales. Obtain inventory certificate from client.</li> <li>Determine clerical accuracy of inventories by verification of extensions, footings, and summaries.</li> </ol> <ol style="list-style-type: none"> <li>Compare beginning inventory with amount in preceding year's audit working papers.</li> <li>Analyze retained earnings account and appropriations of retained earnings.</li> <li>Examine consignment contracts, reports from consignees, and shipping records.</li> <li>Examine shipping records and sales invoices for several days before and after close of period to determine accuracy of cutoff of sales.</li> <li>Age the accounts receivable. Review doubtful accounts with credit manager. Compute ratios showing relationship of valuation allowance to (a) accounts receivable, (b) net sales, and (c) accounts written off during the year.</li> <li>Compute depreciation provision and review consistency of rates and methods used.</li> <li>Analyze prepaid expenses and deferred charge accounts to determine that definite benefits will be received in future periods from any charges being carried forward as assets. Examine supporting documents such as insurance policies, tax bills, and lease agreements.</li> <li>Compare accruals with those of prior years. Make independent computation of accruals.</li> <li>Search for unrecorded liabilities by review of subsequent transactions, especially in check register and voucher register for January. Obtain liability certificate from client.</li> <li>Review company policy as to distinction between capital and revenue expenditures. Investigate charges to fixed asset and intangible asset accounts.</li> <li>Review minutes of directors meetings. Make inquiries of client's legal counsel. Obtain liability certificate from client.</li> <li>Review internal control over issuance of notes. Compare interest expense with amount of notes outstanding.</li> <li>Make detailed comparison of each category of sales with corresponding figures for preceding periods. Compute ratios. Investigate variances.</li> <li>Make detailed comparisons of each category of cost of sales and expenses with corresponding figures for preceding periods. Compute ratios. Investigate significant variances.</li> </ol>

**Number 4** (Estimated time—20 to 30 minutes)

You have been making annual audits of the XYZ Sales Company. During the last few years, earnings have shown a slight but steady decline.

At the beginning of this year's audit, you obtain company-prepared financial statements which show a significant increase in earnings for this year over the prior three years. The company is engaged in a wholesaling operation and resells to retailers the products purchased from various manufacturers. There have been no unit price changes in either purchases or sales. The method of operation remains the same so that increased efficiency does not account for the increase in income. The company's other sources of revenue remain the same. In short, the business has been run on the same basis as in the past. In addition, you are aware that management is anxious to present a favorable statement of income since it is facing a struggle for control with a group of stockholders who charge that income has declined due to mismanagement. You conclude that net income may be overstated by understating expired costs and expenses or liabilities, or overstating assets.

The company is on a FIFO inventory basis. A physical inventory was taken at the year end. A tag system was used and all tags were accounted for.

**Required:**

Draw a line down the middle of a lined sheet(s) of paper.

- a. To the left of the line, state the ways that expired costs and expenses or liabilities may have been understated, or assets overstated.
- b. To the right of the line, for each item mentioned in part a, outline in a few words the audit steps that would reveal each understatement or overstatement.

**Answer 4**—See page 497 for answer.

**Number 5**

You are engaged in the audit as at December 31 of a medium-sized manufacturing company which has between three and four hundred open trade receivable accounts. As a part of the interim work, you decide on October 10 to select approximately one hundred customers' accounts for positive confirmations as of September 30. You obtain an aged trial balance of the accounts receivable as at September 30 and trace the balances of the open accounts to the trial balance from the subsidiary ledgers. In addition, you test the aging, foot the trial balance, and agree the total with the accounts receivable control account in the general ledger. Also, detailed tests of the sales and credit journals are made for the month of September.

**Required:**

- a. Enumerate the types of accounts you would want to include in your selection of accounts to be circularized.
- b. Outline the additional audit steps that should be undertaken at December 31 in support of the amounts shown as accounts receivable; the client is preparing for your use an aged trial balance of accounts receivable as of that date.

**Answer 5**

- a. In selecting the accounts receivable to be confirmed, the auditor would ordinarily include the following:
  1. All accounts with large balances whether current or past due.
  2. Old or inactive accounts.
  3. Accounts in dispute as evidenced by correspondence with customers or other sources.

4. Accounts of customers known to be in financial difficulties.
  5. Accounts in hands of attorneys or collection agencies.
  6. A representative number of accounts with small balances.
  7. A representative number of accounts with credit balances.
  8. A group of accounts selected in a random manner such as every twentieth account in the trial balance.
- b.
1. Compare the total of the December 31 aged trial balance with the general ledger control account.
  2. Foot and cross-foot the December 31 aged trial balance.
  3. Compare the totals and number of accounts in the December 31 aged trial balance with the September 30 aged trial balance. Investigate any significant variances.
  4. Trace the balances of selected accounts on the December 31 aged trial balance to the subsidiary ledger cards. Prove the footings of these ledger cards and test the accuracy of aging of these accounts.
  5. Prove the footings of the general ledger control account for accounts receivable.
  6. Analyze the general ledger control account from September 30 to the balance sheet date and investigate any journal entries or other entries of unusual nature.
  7. Note on the December 31 aged trial balance the amounts collected since the closing date.
  8. Confirm accounts with large balances at December 31 which were not circularized at September 30 or for which replies were not received.
  9. Investigate accounts receivable from officers, employees, directors, and stockholders.
  10. Determine whether shipments on consignment have been included in receivables and make any necessary adjustments.
  11. Review the year-end cutoff of sales transactions by comparing shipping records with duplicate sales invoices for several days before and after the balance sheet date.
  12. Review credit memoranda issued in month following the closing date to disclose disposal of fictitious receivables or overshipment of orders.
  13. Review the adequacy of allowances for sales discounts and sales returns.
  14. Review the propriety of cash discounts allowed, and compare relationship to net sales for current and preceding years.
  15. Review the write-offs of uncollectible accounts during the year, noting authorizations, and percentage relationship to net sales for the current and preceding years.
  16. Review with the credit manager all slow and doubtful accounts and determine their collectibility.
  17. Determine the adequacy of the allowance for bad debts in the light of the preceding steps. Compute ratios expressing the relationship of the valuation allowance to (1) accounts receivable, (2) net sales, and (3) accounts written off during the year.
  18. Obtain from the client a certificate covering accounts receivable, and stating that:
    - (a) All accounts represent valid claims arising on or before December 31.
    - (b) No receivables have been hypothecated except as shown on the balance sheet.
    - (c) Merchandise shipped on con-

signment has been identified as such and not included in receivables.

- (d) All known uncollectible accounts have been written off.
- (e) The allowance for doubtful accounts is believed to be sufficient to cover losses which may be sustained in realization of the receivables.

### Number 6

During the month of April, you are engaged to examine the balance sheet of a new client as of March 31. The client manufactures steel castings and forgings. A physical count of all inventories is made at the end of each quarter of the fiscal year and the company adjusts its inventory book amounts to reflect the physical counts. As you were not engaged at the time of the physical inventory on March 31, you request that the company make another physical inventory count at the end of April in order that you may observe and make test counts. The client agrees and another inventory is taken on April 30 which you witness.

Inventories of raw materials, work-in-process and finished goods totaled \$125,000 at March 31. Total current assets amounted to \$188,000, total current liabilities were \$186,000 and total assets were \$450,000.

The company maintains perpetual inventory records of raw materials and supplies, but has no job cost system or perpetual records of work-in-process or finished goods. Production records are kept in the plant showing the tons of castings poured each day, and sales records reflect the tons of castings and forgings sold daily to various customers of the company.

### Required:

- a. What audit procedures would you use to satisfy yourself as to the *quantities*

on hand at balance sheet date?

- b. Assuming that the results of your tests of inventories are satisfactory, would you issue an audit report unqualified as to opinion and scope of examination in view of the fact that you were not on hand to observe inventories at March 31? Give reasons for your answer. (Limit your discussion to a consideration of the inventory problem.)

### Answer 6

- a. The audit procedures to be used in verifying the inventory quantities on hand at the balance sheet date are as follows:
  1. For raw materials and supplies, compare the physical quantities established by the physical inventory taken on April 30 with the perpetual inventory records.
  2. After verifying the April 30 book figures for raw materials and supplies, verify the receipts and issuances shown by these records for the month of April. Trace the April entries to supporting documents such as vendors' invoices, receiving reports, and material requisitions.
  3. For finished goods and work in process, compile from the daily plant production records the tons of castings poured during April. Also compile from the daily sales records the tons of castings and forgings sold in April. Determine the March 31 quantities by deducting April production and adding back April sales to the quantities counted on April 30. Compare the quantities computed in this manner with the inventory summary sheets used by the company in taking the March 31 inventory.
  4. Review the March 31 inventory summary sheets and inventory tags for clerical accuracy in transcribing quantities.
  5. Review the written procedures, if

any, used by the company in planning and carrying out the March 31 physical inventory.

6. Discuss with officials of the client any significant changes in inventory quantities between the two inventory dates.
- b. In considering whether an audit report unqualified as to opinion and scope of examination should be issued, the following points should be considered:

1. The auditors were engaged to examine the balance sheet only; consequently no verification of beginning inventory is necessary.
2. The inventories are material in relation to current assets and the total assets.
3. It is assumed that the results of the audit work on inventory were satisfactory, and specifically that the physical inventory observed on April 30 was satisfactorily reconciled with the March 31 inventory.

The observation of a physical inventory one month after the balance sheet date and the satisfactory reconciliation for the intervening month appear to meet the requirement that the auditor be present to observe the taking of physical inventory. When perpetual inventory records are maintained, it is common practice to take physical inventory at dates other than the year-end. Since the client maintains perpetual inventory records for raw materials and supplies, the auditor's observation of a physical inventory at April 30 is an acceptable situation insofar as this portion of inventory is concerned. With respect to the work in process and finished goods, the existence of daily records of production and of sales appears to provide a basis of control comparable to that afforded by formal perpetual inventory records. Under these circumstances, it does not appear neces-

sary to take an exception in the scope section of the audit report, although some auditors might prefer to disclose that the observation of inventory took place subsequent to the balance sheet date.

An unqualified opinion in the audit report is clearly justified since the procedures followed have satisfied the auditor as to the reasonableness of inventories.

### Number 7

The Patrick Company had poor internal control over its cash transactions. Facts about its cash position at November 30, 1958 were as follows:

The cash books showed a balance of \$18,901.62, which included undeposited receipts. A credit of \$100 on the bank's records did not appear on the books of the company. The balance per bank statement was \$15,550. Outstanding checks were: No. 62 for \$116.25, No. 183 for \$150.00, No. 284 for \$253.25, No. 8621 for \$190.71, No. 8623 for \$206.80, and No. 8632 for \$145.28.

The cashier abstracted all undeposited receipts in excess of \$3,794.41 and prepared the following reconciliation:

Balance, per books, November 30, 1958.....		\$18,901.62
Add: Outstanding checks:		
8621.....	\$190.71	
8623.....	206.80	
8632.....	145.28	442.79
		<hr/>
		19,344.41
Less: Undeposited receipts....		3,794.41
		<hr/>
Balance per bank, November 30, 1958.....		15,550.00
Deduct: Unrecorded credit....		100.00
		<hr/>
True cash, November 30, 1958.		\$15,450.00

### Required:

- a. Prepare a supporting schedule showing how much the cashier abstracted.
- b. How did he attempt to conceal his theft?

- c. Taking only the information given, name two specific features of internal control which were apparently missing.
- d. If the cashier's October 31 reconciliation is known to be in order and you start your audit on December 5, 1958, what specific auditing procedures would uncover the theft?

tion is known to be in order and you start your audit on December 5, 1958, what specific auditing procedures would uncover the theft?

## Answer 7

a.

Cash balance per books, November 30, 1958 (on hand and in bank).....			\$18,901.62
Add: credit by bank not yet entered in books.....			100.00
Adjusted cash balance (on hand and in bank).....			\$19,001.62
Deduct: Cash in bank, November 30, 1958:			
Balance per bank, November 30, 1958.....	\$15,550.00		
Less: Outstanding checks:			
62.....	\$116.25		
183.....	150.00		
284.....	253.25		
8621.....	190.71		
8623.....	206.80		
8632.....	145.28	1,062.29	14,487.71
Actual amount of cash on hand, November 30, 1958.....		\$ 4,513.91	
Cash on hand as reported by cashier.....		3,794.51	
Undeposited receipts abstracted by cashier.....		\$ 719.50	

- b. The cashier attempted to conceal his theft of \$719.50 by three steps:
1. Omitting outstanding checks from the bank reconciliation.
  2. Underfooting the list of outstanding checks included in the bank reconciliation.
  3. Deducting from the bank balance a credit item that should have been added to the bank balance.
- c. Two conspicuous weaknesses in internal control are:
1. The cashier is permitted to prepare the bank reconciliation in addition to his other cash-handling duties.
  2. No one other than the cashier regularly compares the cash receipts with the amounts deposited in the bank.
- d. If the cashier's October 31 reconciliation is known to be in order, the following audit procedures performed on De-

cember 5 would indicate the amount of cash which should have been on hand November 30, and thereby disclose the theft.

1. Count cash on hand December 5, and work back to November 30 balance of cash on hand by deducting cash receipts and adding deposits for the intervening days.
2. Compare paid checks returned since October 31 with the outstanding checks listed in the October 31 reconciliation and with the check register for November. Account for sequence of check numbers and prepare a list of outstanding checks at November 30.
3. Trace the undeposited cash receipts shown in the October 31 reconciliation to deposits in the bank statement. Also compare daily cash receipts for November with deposits

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4. Prepare a bank reconciliation as of November 30.

#### Number 8

The Professional Men's Association of Middleton is made up of men in the various professions, including CPAs. From the start it has been tax exempt from federal income and excise taxes, other than payroll.

The dues for members are \$40 a year, after an initiation fee of \$100. The Association has had a consistent policy of operating on a cash basis. It does not deposit initiation fees received with applications and does not consider them as income until the Membership committee has acted thereon. Then the successful applicants' fees are deposited and the unsuccessful applicants' checks are returned to them.

The fiscal year ends August 31. Each year the directors choose from the membership a CPA to make a thorough audit; and no one is allowed to audit two consecutive years. This year you have been selected for the first time, but you are solemnly warned that the directors will not tolerate any suggestion of putting the accounts on an accrual basis. You accept. An adequate fee is provided.

The secretary furnishes you with the following information:

Membership at September 1, 1957..		2,980
Elected during year.....	123	
Dropped for non-payment of dues..	15	
Died.....	37	
Expelled.....	1	53
Net gain.....		70

Your examination of records shows the following:

Notices that "dues are due" are sent out

in August. Dues for a full year, not to be prorated, must be paid when elected to membership. Prior to the end of the preceding fiscal year 410 members had paid their dues and in the current fiscal year 457 members had paid their dues for the year beginning September 1, 1958. One of these had died very suddenly on August 30 and is included in the 37 above. No refunds are made for deaths taking place after the fiscal year begins; however refunds of one-half the dues are made to expelled members. There were 36 applications pending at the end of the fiscal year. During the course of your audit, the committee met and approved of 34. You further find that at the *beginning* of the year there were 47 such applications and that 45 had been acted upon favorably and are included in the 123 above.

The directors are interested in learning if there is a substantial difference between the income from dues on a cash basis as compared to the accrual basis.

#### Required:

- a. Prepare a schedule of income from membership showing:
  1. Changes in members
  2. Income from initiation fees
  3. Income from dues for the year, accrual basis
  4. Income from dues for the year, cash basis
  5. Total income from membership
  6. Reconciliation of the income from dues cash basis to the accrual basis
- b. What other audit procedures would you use to verify the income from membership? *Give reasons.*

Answer 8

a.

**PROFESSIONAL MEN'S ASSOCIATION OF MIDDLETON**  
**INCOME FROM MEMBERSHIP FOR THE FISCAL YEAR ENDED AUGUST 31, 1958**

	<i>Number of Members</i>	<i>Amount</i>
<i>Initiation Fees:</i>		
Applications pending, September 1, 1957.....	47	\$ 4,700
Applications rejected and fees returned.....	2	200
Applications approved.....	45	\$ 4,500
Additional applications received and approved during fiscal year.....	78	7,800
Total income from initiation fees for year.....	123	\$ 12,300
Applications pending, August 31, 1958.....	36	\$ 3,600
<i>Income from dues (accrual basis):</i>		
Dues paid in advance at September, 1957.....	410	\$ 16,400
Dues receivable from other members.....	2,570	102,800
Membership at September 1, 1957.....	2,980	\$119,200
Additions during year.....	123	4,920
Total.....	3,103	\$124,120
Deduct: Members dropped for non-payment of dues.....	15	600
Members died.....	37	—
Members expelled (refund $\frac{1}{2}$ of dues).....	1	20
Total deductions.....	53	620
Income from dues for year ended August 31, 1958.....	3,050	\$123,500
<i>Income from dues (cash basis):</i>		
Members paying dues in advance.....	457	\$ 18,280
Deduct: Refund to deceased member.....	1	40
Net amount of dues paid in advance.....	456	\$ 18,240
Membership at September 1, 1957.....	2,980	
Deduct: Members paid in advance at September 1, 1957.....	410	
Members dropped for non-payment of dues.....	15	
	425	
Continuing members paying current dues during year.....	2,555	
New members added during year.....	123	
Total members paying current dues during year.....	2,678	\$107,120
Deduct: Refund of $\frac{1}{2}$ of dues paid by member expelled.....		(20)
Total income from dues for year ended August 31, 1958 (cash basis).....		\$125,340
Income from initiation fees.....		12,300
Total income from membership.....		\$137,640
<i>Reconciliation of income (cash basis and accrual basis):</i>		
Income from dues (cash basis).....		\$125,340
Prepaid dues, August 31, 1958.....		\$ 18,240
Prepaid dues, August 31, 1957.....		16,400
Increase in amount of prepaid dues.....		\$ 1,840
Total dues (accrual basis).....		\$123,500

- b. 1. Verify the number of members at September 1, 1957 by reference to the preceding year's audit report.
2. Verify the data on membership changes supplied by the Secretary by reading minutes of directors' meetings and by reference to membership records.
3. Count the cash on hand at August 31, 1957: determine that \$3,600 of checks are on hand as indicated by the existence of 36 pending applications. This \$3,600 would not be included in the balance sheet figure for cash but should be disclosed in a footnote to the statements. Determine that the checks for \$3,400 corresponding to the 34 applications approved by the Membership committee during the course of the audit were deposited promptly after the Committee meeting. Also determine that the remaining checks amounting to \$200 were returned promptly to the unsuccessful applicants.
4. Review the internal control pro-

cedures applicable to cash receipts. Ascertain that dues collected are deposited intact as promptly as possible. Also ascertain whether serially-numbered receipt forms are issued, and a file of duplicate copies maintained. Ascertain whether checks from members are made payable to the Association rather than to the Treasurer personally.

5. Reconcile the cash receipts record for August and September, 1958 with bank deposits and with membership records, to guard against any lapping activities.
6. Review the by-laws and minutes of directors' meetings to ascertain that action on refunds and on removal of names from the membership records has been in accordance with the by-laws and has been currently authorized by directors or a committee thereof. Determine that a liability has been set up for the refund arising from the death of a member on August 30, 1958.

## ASSOCIATION NOTES

WENDELL P. TRUMBULL

**EDITOR'S NOTE:** Members of the Association are urged to submit news items for this section to Wendell P. Trumbull, College of Business Administration, Lehigh University, Bethlehem, Pennsylvania. Deadline dates for the receipt of items to be included in *THE REVIEW* are October 20 for the January issue, January 20 for the April issue, April 20 for the July issue, and July 20 for the October issue.

### ALABAMA

#### *University of Alabama*

PAUL GARNER gave two addresses last September at the Second Annual Congress of Accountants, in Istanbul, Turkey.

### CALIFORNIA

#### *Los Angeles State College*

MARY MURPHY is listed in the first edition of *Who's Who of American Women*. WARREN C. BRAY will join the staff in September with the rank of associate professor. ROBERT LORIMER and WAYNE CHAPIN have accepted appointments as assistant professors. RAMON JOSE DE REYNA II has been appointed instructor for the coming year. GEORGE N. FRANCIS will be on leave during the fall semester.

#### *Stanford University*

OSWALD NIELSEN recently visited Japan to make arrangements for bringing a number of business managers of Japanese universities to this country for study of American university administration. GERALD WENTWORTH has been elected vice-president of the Bay Area Chapter of the National Society of Business Budgeting.

In February the accounting staff of the Graduate School of Business entertained the accounting staff of the School of Business Administration of the University of California. Papers were exchanged by a member from each school.

#### *University of California at Los Angeles*

HOWARD S. NOBLE spent the spring semester on sabbatical leave. He and Mrs. Nobel were on a world cruise.

### COLORADO

#### *University of Denver*

GRANT C. SCHAFER has been promoted to associate professor, effective in September. ALBERT R. MITCHELL is leaving to accept a position as associate in accounting at Columbia University, where he will be teaching and working on the doctorate.

### FLORIDA

#### *The Florida State University*

The eleventh annual meeting of the Southeastern Section of the AAA was held March 6-7 on the campus. Among those on the program were MARTIN L. BLACK, Duke University, and faculty members from sixteen other universities and colleges in the area.

#### *University of Florida*

JAMES S. LANHAM addressed the Jacksonville chapter of the Florida Institute of CPAs in April. CARL T. DEVINE's leave of absence has been extended to permit him to serve at Massachusetts Institute of Technology this fall. ROBERT DIMAN will stay in Indonesia on the Ford Foundation project of the University of California.

HARVEY T. DEINZER and C. A. ANDERSON recently appeared on TV programs sponsored by the College of Business Administration. L. J. BENNINGER served for two sessions on the Small Business Conference sponsored by the greater Tampa Chapter of Commerce in March.

### ILLINOIS

#### *University of Chicago*

SIDNEY DAVIDSON discussed "New Directions in Accounting Theory" at the recent meetings of the Midwest Economic Association. DAVIDSON and DAVID GREEN, JR. spoke before the Mechanical Contractors Chicago Association. GEORGE H. SORTER talked on the analysis of financial statements before the National Association of Investment Clubs.

### KANSAS

#### *University of Kansas*

WILEY S. MITCHELL will be on leave during the coming year to teach in the Nestle IMEDE Management Development Institute at Lausanne, Switzerland. W. KEITH WELTMER was on leave during the spring semester while attending the Command and General Staff College at Fort Leavenworth. LEROY BAKER is leaving to enter the doctoral program at the Harvard Graduate School of Business Administration.

A new five-year program in accounting has been approved. It will lead to the master's degree, and will be oriented primarily toward public accounting.

LOUISIANA

*Louisiana State University*

LLOYD MORRISON has become associate editor for accounting of the *Southwestern Social Science Quarterly*. ELZY MCCOLLOUGH served as program chairman of the Sixth Annual High Speed Computer Conference. JAMES OWEN was 1958-59 president of the Baton Rouge Chapter of the Society of Louisiana CPAs. At the annual meeting he talked on continuing education for accountants. ROBERT H. VAN VOORHIS spoke before the Baton Rouge Chapter on accounting education.

The following have been appointed part-time teaching assistants for the coming year: JAMES HOOD, LUCILLE MATTHEWS, JAMES MODISSETTE, JAMES PATTILLO, WILLIAM SWYERS, RONALD THACKER, and JACKSON WHITE.

MINNESOTA

*University of Minnesota*

DWIGHT J. ZULAUF is returning to Pacific Lutheran University as chairman of the Department of Economics and Business Administration. DONALD L. ANDERSON has accepted an assistant professorship at San Fernando State College. CHARLES R. PURDY is joining the faculty of the University of Southern California this fall with the rank of assistant professor.

MISSISSIPPI

*University of Mississippi*

JAMES D. J. HOLMES received the CPA certificate in February.

MISSOURI

*Washington University*

L. J. BUCHAN, A. E. CARLSON, and J. S. SCHINDLER have been appointed to the faculty of the new Graduate School of Business Administration.

Additions to the faculty last fall were RALPH J. WINSTON, assistant professor, and VIRGINIA L. BEAN, instructor. A. E. CARLSON was named "author of the year" by the St. Louis Chapter of NAA. The University in cooperation with the Society of Missouri CPAs was host to a conference on school-district audit problems.

NEBRASKA

*University of Omaha*

PAUL T. CROSSMAN passed away in February. A scholarship fund in business administration is being collected as a memorial.

NEW YORK

*Colgate University*

CHI-MING HOU has been granted a leave of absence for the 1959 fall semester to allow him to accept a research fellowship in Chinese Economic Studies at Harvard University.

OHIO

*John Carroll University*

ROBERT O'CONNOR presented a slide lecture on tax research in April at the Activities Center.

*The Ohio State University*

JAMES R. MCCOY has been appointed dean of the College of Commerce and Administration, effective July 1. MCCOY is president-elect of the Faculty Club. DANIEL M. SHONTING attended the Fifth Annual Electronics Conference of the AMA in New York City.

The late MARQUIS GEORGE EATON was inducted into the Ohio State University Hall of Fame at the Twenty-First Annual Institute on Accounting, held on the campus in May.

*Western Reserve University*

T. M. DICKERSON is serving a second year as director in the Ohio CPA Society. In April he addressed the Toledo Control of the Controllers Institute of America. ANDREW D. BRADEN was on sabbatical leave during the spring semester. VINCENT P. KOPY has been appointed instructor

XAVIER UNIVERSITY

HARRY R. MALY has been added to the staff. A. RAYMOND TILTON assumed the duties of county auditor in March; he will continue as lecturer in the Evening College. GEORGE C. SELZER is serving on the committee for the Ohio Region of the AAA.

Speakers—all CPAs—appearing before the Accounting Society during the year were JACK MEYERHOFF, BLAINE LISK, MILES DOON, WILLIAM MERS, OTWELL RANKIN, HARRY SONKIN, FRED DENNIS, CHARLES SWORMSTED, ERWIN A. STADLER, and COLIN PARK.

## OKLAHOMA

*University of Tulsa*

CLIFFORD E. HUTTON has been granted a leave of absence for 1959-60 to pursue further graduate study at The University of Texas. He is the recipient of a Humble Oil scholarship.

## PENNSYLVANIA

*Lehigh University*

The Beta Epsilon Chapter of Beta Alpha Psi was installed in May by a team from the Wharton School of Finance headed by WILLIARD E. STONE.

## MUHLENBERG COLLEGE

WILSON N. SERFASS, JR. has accepted an appointment as associate professor, effective in September.

*The Pennsylvania State University*

CHARLES J. ROWLAND retired July 1 with the rank of professor emeritus after thirty-four years of service. The Thirteenth Annual Tax Seminar, sponsored by the College of Business Administration, was held during the last week of May.

*University of Pittsburgh*

JAMES H. ROSSELL has been appointed associate director of education of the Pittsburgh Chapter of NAA. RAYMOND R. ORIE has resigned to accept the position of director at the Robert Morris School.

*Temple University*

DOUGLAS F. HYDE gave a series of six radio lectures on federal income taxes. JOHN E. CARLOCK has been serving as treasurer of the Philadelphia Chapter of NAA.

## TENNESSEE

*Memphis State University*

JESSIE W. SPICELAND has been named head of department. JAMES T. THOMPSON has been advanced to associate professor. LAWRENCE W. CURBO, formerly of the University of Mississippi, has been appointed assistant professor.

The Accounting Club participated during the past year in a series of lectures sponsored by the

Memphis Chapter of the Tennessee Society of CPAs.

*University of Tennessee*

J. H. McLEAN recently received the LL.B. degree from Emory University. STEPHEN IRVINE is leaving the staff to enter public accounting.

## TEXAS

*Agricultural and Mechanical College of Texas*

WILLIAM WHITTINGTON served as conference secretary of the Twelfth Annual Accounting Conference, held April 27-28 in the Memorial Student Center.

*Baylor University*

EMERSON O. HENKE was chairman of the accounting section meetings at the annual meeting of the Southwestern Social Science Association, in Galveston, March 27-28. RODERICK L. HOLMES and J. W. PARSONS were program participants. JOYCE DEAN received the CPA certificate in January.

*The University of Texas*

The annual meeting of the Texas Association of University Instructors in Accounting, at the University of Houston in March, was attended by ROBERT L. GRINAKER, ROBERT E. LINDE, KALO NEIDERT, C. AUBREY SMITH, and WAYNE P. TENNEY.

ROBERT E. SEILER is employed by the Gulf Oil Corporation for the summer. BILL BISHOP is the recipient of a faculty assistance award from the Haskins & Sells Foundation.

JIM G. ASHBURNE was principal speaker at recent meetings of the San Antonio and Austin chapters of the Texas Society of CPAs. GLENN A. WELSCH spoke to the Southern Regional Conference of the Controllers Institute in New Orleans. ROBERT E. LINDE was on the program of the Fifth Annual Governmental Accounting and Finance Institute, sponsored by the University.

## VIRGINIA

*University of Virginia*

MARVIN TUMMINS addressed the Southeastern Section meeting of the AAA in March.

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## BOOK REVIEWS

JAMES S. LANHAM, *Editor*

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## Accounting

AUSTRALIAN SOCIETY OF ACCOUNTANTS, *Proceedings of Convention*: Hobart, Mercury Press Pty. Ltd., 1958, pp. lv, 286.)

The largest body of accountants in Australia in 1958 sponsored a convention in Sydney for which 750 members were registered as in attendance. At that time membership in the Society stood at some 21,500 persons. This organization is composed of both practicing and non-practicing accountants. Possibly, from an American viewpoint, it might be considered to be somewhat similar to the National Association of Accountants with one important difference, the Australian Society examines its candidates.

In recent years, the Society has had an active role in Colombo Plan countries, maintaining examination centers at Hong Kong, Singapore, Kuala Lumpur, and Penang. The opening address of the Rt. Hon. R. G. Casey, Commonwealth Minister for External Affairs, directed attention to the activities of the Society in the free South and South-East Asian countries. It is conceivable that at some future Society convention, representatives of this area of the world may present technical papers and participate in discussions on accounting theory and practice.

The sessions offered at the 1958 Convention were as follows:

- I. The Economics of Capital Expenditure
  - a. Planning Capital Expenditure
  - b. Financing Capital Expenditure
  - c. Controlling Capital Expenditure
- II. Internal Auditing in Australia
  - a. In Some Companies
  - b. In a Government Instrumentality
  - c. Statistical Techniques as Applied to Internal Auditing
- III. The Annual Report and Accounts as a Source of Information
  - a. As a Source of Information to Shareholders and Employees
  - b. As a Source of Information to Economists
  - c. As a Source of Information to Investing Institutions
- IV. Influences Shaping Accounting
  - a. The Influence of Taxation
  - b. The Influence of Law
  - c. The Influence of Economic Forces

These papers provide an excellent review of Australian business organization and management and company finance and accounting. Most of them show the influence of American, rather than United Kingdom, practice and literature. Publications of The American Institute of CPAs, The Controllers Institute of America, and The Institute of Internal Auditors receive frequent quotation, with copious reference made to American writers in the fields of accounting history, cost accounting, management theory, statistical sampling, and taxation.

The convention was closed by the President of the Society who emphasized that the responsibilities of

Australian accountants had broadened "not only in scope but in social significance." Yet in the papers presented it was inherent that much remains to be accomplished in Australia in enlarging financial data furnished to shareholders and other interested parties. In another field—professional education—the Society has made important recent strides by helping establish Chairs of Accountancy and sponsoring American Fulbright Professors of Accounting who have lectured at the various universities in Australia.

Members of the Australian Society of Accountants enjoy wide recognition in business, financial and governmental circles. Surely, because of their current status, the quotation of passages from Henry Hatfield's classic essay on "An Historical Defense of Bookkeeping," circa 1923, at the close of the Convention, is unfortunate. It casts a pall over the great contribution accountants have made in every aspect of Australian life, especially since World War II, and clouds the professional aspect of accountancy which deserves and received constant reiteration in the Antipodes today. With wider university education for the profession, and additional research and publication of technical works, Australians will stand with the leaders of the worldwide accounting profession. Then they will quote modern Australian professional literature, rather than foreign writers. In turn, the publications of Australian accountants and educators will win a recognized place in the body or footnotes of overseas volumes on accounting and auditing.

MARY E. MURPHY  
Associate Professor of  
Business Administration

Los Angeles State College of  
Applied Arts and Sciences

HAY, LEON E., *Budgeting & Cost Analysis for Hospital Management* (Bloomington: University Publications, 1958, pp. xi, 205, Price \$6.25).

*Budgeting and Cost Analysis for Hospital Management* stands out among hospital texts because it emphasizes the importance of management and the managerial functions of planning, organization, coordination, and control. This emphasis is quite new in hospital texts and reflects the trend of recent years for hospitals to adopt management methods proven to be effective in industry.

*Budgeting & Cost Analysis* has nine chapters including an introduction, with four each devoted to the two topics of cost analysis and budgeting. Since one of the objectives of cost analysis is to provide a measure of departmental performance and a basis for planning future operations, Dr. Hay logically takes up this topic first in order to provide a proper foundation for his chapters on budgeting. However, the main emphasis of his material on cost analysis is its usefulness for price setting purposes and in negotiations with third party purchasers of hospital care.

In Chapter III a careful comparison of three methods

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of cost analysis is made. Method 1 allocates service department costs directly to revenue producing departments; Method 2, the step-down method, using sequential closing of service department costs, is advocated by both the American Hospital Association and the United Hospital Fund; Method 3, the double distribution method, was formerly required by the United Hospital Fund of its participating hospitals. Dr. Hay's conclusions, after comparing the three methods, are that all three methods are equally useful as a basis for planning future operations or for measuring departmental performance. After a good many years of experience with Method 3 the United Hospital Fund has now adopted Method 2, according to Dr. Hay, who recommends the latter method as the best basis for negotiations for contract purchasers of hospital care. Dr. Hay feels that the results of Method 1 could be questioned by contract purchasers. His chief recommendation for Method 1 is its clerical simplicity and it may be inferred that for the hospital that is concerned only with measuring departmental performance or planning future operations, Method 1 is entirely satisfactory.

Chapter IV discusses other aspects of cost analysis and describes methods of differentiating fixed and variable elements of costs both arithmetically and graphically. It also shows the usefulness of the contribution-to-overhead approach in evaluating revenue producing departments.

In his chapters on budgeting, Dr. Hay makes a real contribution to hospital management. He makes these points: budgets are not just financial plans, they are also operational plans; budgets make it easier for all departments to work toward a common goal; budgets may be expressed in quantities or time units and may be more meaningful to department heads when so expressed; salary and wage budgets and supplies and expense budgets should reflect what *ought* to be, and should be flexible so as to provide a yardstick for each level of activity.

The chapters on budgeting cover the principles of budgeting and the budgeting problems involved with general fund income, expense, and cash. Monthly and annual budgets of income, expense, and cash receipts and disbursements are well illustrated and explained in the many illustrative hypothetical cases. Of particular interest is the development of estimated financial statements as the final step in the use of a comprehensive budgeting system.

In summary, Dr. Hay has written a very readable book, one which brings ideas new to the hospital field and one which gives the best presentation to date of the dynamics of budgeting and cost analysis for hospital management. Excellent illustrative cases are used throughout the book. This book should be in the library of every public accountant with a hospital for a client, and on the desk of every hospital administrator, regardless of the size of his hospital.

When the second edition of this book is prepared, this writer hopes that the author will expand the portions of the text dealing with principles and cost concepts and will also include methods of analyzing varia-

tions in operating results in terms of price and quantity.

DAVID R. KENERSON  
Administrator

*Mound Park Hospital*  
St. Petersburg, Florida

ROBERT H. IRVING, JR. AND VERDEN R. DRAPER, *Accounting Practices in the Petroleum Industry* (New York: The Ronald Press Company, 1958, pp. viii, 247, Price \$6.00).

The petroleum industry and the public accounting profession, as well as teachers and students of accounting in our universities, have long needed a well-written explanation of the many accounting problems and practices peculiar to the petroleum industry. Messrs. Irving and Draper, both experienced C.P.A.'s with Price Waterhouse & Co., seem to have taken a long step in the direction of satisfying this need. They have completed the scholarly job of putting together this brief treatise on such a complicated subject. Within 247 pages they have devoted 69 pages to "Crude Oil Production," 26 pages to "Refining," 36 pages to "Transportation," and 13 pages to "Marketing." To complete the book they have added three appendices totaling 69 pages, and have allowed 34 pages for a most adequate combined glossary and index.

Their book is written in terms the layman or student should understand with the aid of the glossary provided. No journal entries, books of entry, forms, statements, or other system media are injected to restrict their treatise to any particular company or type of company by name, size, or geographical location. In fact, Chapter 9 on "Costs and Inventories" is virtually the sole chapter containing any illustrative methodology and procedure. Other chapters are dependent almost entirely on the simple well-chosen vocabulary of the authors to make clear the current practices and problems encountered. At the onset this departure from most other books written to explain an industry gave this reviewer some doubts and qualms, but as he completed the work he found it less and less of a handicap. Perhaps the omission of any pro-forma statements, schedules, cost sheets, or charts of account, as well as other system materials, may be considered the only possible weakness in an otherwise most-excellent explanation of such specialized material.

Heaviest emphasis has been placed on topics under "Crude Oil Production" (Part I) wherein chapters cover: "Leasing and Exploration Costs Including Undeveloped Acreage," "Producing Properties," "Natural Gasoline Plants," "Unitization and Secondary Recovery," "Crude Oil Purchases and Sales," "Crude Oil Inventories," and "Allocation of Indirect Costs." "Refining Costs" are the subject of Part II, in which chapters take up: "Refining Processes and Products," "Costs and Inventories," "Allocation of Indirect Costs," and "Research and Development Costs." In Part III, "Transportation," there are separate chapters on "Pipe Line Transportation," "Rail Transportation," and "Marine Transportation." Materials in the latter chapter are quite informative and thorough, taking up proportionately almost half the transportation area pages.

It is doubted if any other text does as thorough a job on marine transportation in so few pages without an illustration or exhibit. Part IV is devoted to "Marketing," which is disposed of in two chapters, one on "Types of Organizations in the Marketing of Petroleum Products," and the other on "Accounting for Certain Phases of Marketing Operations."

The Appendices will be useful to those in the petroleum producing business. Appendix I includes the Petroleum Accountants' Society of Oklahoma Form T-1955-2 "Accounting Procedure for Unit and Joint Lease Operations." Appendix II is the "Model Form of Unit Agreement" published by the American Petroleum Institute. Appendix III contains the "Model Form of Unit Operating Agreement" also published by the American Petroleum Institute.

The authors have tried to describe only those accounting practices peculiar to the oil industry. Virtually all references to income taxes and tax problems of the industry have been omitted. Where alternative methods of treating certain practices exist the authors have presented all of the major alternatives without attempting to state the most desirable, or most commonly-followed, or to "take sides" on any controversial topic among the many touched upon in their book.

Irving and Draper should be complimented upon their effective means of transmitting in such a brief number of pages so much vital information about this complex and far-flung industry. As a reference work in libraries their book will have no equal at this time. It should be invaluable to graduate students in our universities as well as to certified public accountants wishing to learn more of the diverse practices of their clients in the petroleum industry. It is even suspected that those within the industry itself will learn much about others in their field from a study of this book. It is understandable, clear, and timely, without attempting to criticize, "preach," or carry any specific message to anyone.

WILLIAM F. CRUM  
Professor of Accounting

University of Wichita

WALTER B. MEIGS, *Principles of Auditing*, Revised Edition (Homewood, Illinois: Richard D. Irwin, Inc., 1959, pp. xvi, 820, Price \$7.50).

Auditing is, perhaps, the most difficult course in the accounting curricula with which to deal in the classroom. The emphasis is on practical aspects of accounting, and as a result it is difficult to prevent the student from becoming bored with the many detailed routine auditing procedures and techniques. The problem of maintaining an interesting and realistic atmosphere in the classroom presents a challenge to the authors and to the instructors. Professor Meigs has met this challenge admirably in this edition of his auditing text. The procedures and techniques are described in simple but direct language and the reasons for each are interwoven with the description. The material is directed to the student rather than the practitioner.

The book contains twenty-seven chapters and eight case studies. The demand for audited statements, the

type of audit reports, and the role of the CPA are discussed in Chapter 1. This is followed by a chapter describing the public accounting profession in some detail.

The chapter (ch. 3) on tests and samples does not give a comprehensive coverage to statistical sampling techniques, but it does describe methods generally used by accountants and it points out the criticism of the traditional approach. The author then indicates that the auditing profession will probably make increasing use of statistical principles in the future.

Two chapters (ch. 4 and 5) are devoted to internal control. The meaning, the need, and the limitations of internal control are covered. The internal control questionnaire is illustrated and discussed adequately without belaboring this point. Although these are the only chapters that are entitled "internal control" the author emphasizes the role of internal control throughout the text before concluding with a chapter (ch. 27) on Internal Auditing.

The chapter (ch. 6) on evidence should certainly convince the student that the role of the auditor is not one of verifying the mathematical accuracy of the clients' records. The coverage of working papers in Chapter 7 is similar to that given to the internal control questionnaire. A complete set of working papers is not illustrated. However, the uses of working papers and the techniques of preparing them are adequately illustrated and discussed.

The techniques and procedures for auditing specific items are covered in Chapters 8 through 24. The coverage throughout is comprehensive, but it is not a monotonous repetition of routine steps. The reason for each procedure is given, thereby, making the material more meaningful to the student.

Audit reports are included in Chapter 25. The material presented in this chapter complement the discussion of audit reports in the first chapter where the relationship of the audit to the reports was brought out.

Management Services, the relatively new service performed by the CPA, is the topic of Chapter 26. General information relative to this new field is included along with some specific points that may be raised concerning these services and the independent CPA.

This volume is well supplied with questions and problem materials. There are 644 such questions and problems—an average of about 28 per chapter. They are divided into three groups as follows: Review Questions, Questions Requiring Analysis, and Problems. Many of the questions requiring analysis and the majority of the Problems come from the AICPA examinations. In general the questions and problems present realistic and practical situations that would be encountered on audit engagements.

The author has a noteworthy objective in presenting Questions Requiring Analysis. These questions are presented as a means of developing the students' skill in communication. When one considers the weakness of accounting graduates (as well as other graduates) in the ability to communicate, it is apparent that such skill needs to be developed. With rare exceptions, these questions would require the student to exercise this

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ROBERT H. Princip (Baton ana Str viii, 510)

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skill in presenting proper answers.

The eight case studies provide additional material for instructional purposes, and serve as excellent devices for consolidating the material presented in the various chapters as well as emphasizing the things to look for in each phase of the audit. These cases do not have standard routine solutions. They challenge the student to use his judgment and to exchange ideas with others.

Taken as a whole, this is a fine book. The author points out on page 362 that he does not want to delve into accounting theory, but his coverage of such theory is more than adequate. His references to the AICPA bulletins are frequent throughout. The material is relatively comprehensive and is presented in a clear and logical manner. It is a valuable addition to the list of auditing texts now available.

JAMES H. McLEAN

Associate Professor of Accounting  
The University of Tennessee

ROBERT H. VAN VOORHIS, *Accounting—A Survey of Principles and Practical Record Keeping Techniques* (Baton Rouge, Louisiana: Lithographed by Louisiana State University Printing Office, 1958, pp. viii, 510, \$5.40.)

This book is written to acquaint a broader group of students and professional people with business record keeping. The author believes that the development of material covering the practical record keeping needs of many people outside accounting and other specialized business fields has been too much neglected. He has accordingly attempted to design a text which readily may be understood by persons only casually engaged in business practice. The book is intended for a one semester terminal college course, or it may be used also for home study by those who cannot devote time to classwork.

The first nine chapters follow a different approach to the subject of accounting than is found in the conventional elementary text. A specific procedure for daily record keeping is worked out for each of several business activities: (1) personal records, (2) family records, (3) social organizations, (4) professional persons, (5) religious organizations and (6) service organizations. If the book ended at this point it would have already made a valuable contribution to elementary record keeping.

Much of the orientation in accounting has been toward a mythical man or business enterprise all too often vague. Principles too broad for clear specific use, and not strictly adhered to even in the course of presentation, have been taught as if they were not only sound but also equally useful. The student whose major interest is not business should have something more specifically related to what he is doing. The book meets this challenge very well. In fact this concrete approach might be better suited for all students than the more conventional one.

The first step in a gradually developed procedure is to show Johnny Junior how to keep his personal finance record when he enters college. The meticulous record keeping might seem trivial at first, but it will not be

abstract for Johnny, and it might have an appeal to his Dad who pays the bills.

A good presentation is made of a set of family records. The family budget is given first emphasis, then is correlated with actual performance. The typical head of a household can make use of this.

The treasurer of a social club will do well to examine Chapter 6. Here he will find the essentials of a system of financial records worked out for him.

A set of books is presented for a general medical practitioner. If the doctor himself is not familiar with a set of records such as presented here, his secretary must be. The approach throughout the entire book is to take a concrete case and present an adequate set of detailed records and final reports. The legal as well as economic aspects of the case are given consideration.

Especially pertinent is Chapter 8 on Religious Organizations. The activities of a typical small but active church have been used to illustrate the operation of a set of financial records and reports. This situation, as in each of the other cases, is based on an actual situation in which the results have been tested by experience. This should be a valuable reference for the finance officer of a church.

Chapter 9 presents a system of financial records and reports for the endowed recreation center of a small city. Based on an actual case and presented in considerable detail, it is more convincing that would be the hypothetical case so often used in presentation.

Up to this point we have a useful course for secretaries and ordinary citizens. Chapters 10 and 11 present accounting principles and procedure for a small trading business enterprise. The elementary records and complete accruals at the end of a year are treated as adequately as in most conventional texts, but it is done in a concrete setting. Accounting theory is used rather than discussed. The account titles and terminology are conventional, even to the point of reporting *prepaid interest*. A marked advancement is shown when purchase invoices are recorded net and a record made of discounts lost rather than discounts taken.

Chapters 12 and 13 cover individual income tax returns. This information may be readily available elsewhere, but it helps to bring together a fairly well integrated accounting course. Chapter 14 compares the partnership and corporate forms of business organization, again useful to the small business man who operates under his own initiative. The final chapter makes an attempt to interpret corporate annual reports for one who is not technically trained in business.

The work as a whole can be accepted as a valuable contribution to the elementary presentation of accounting. The book should be especially valuable in training secretaries for the small office. As a textbook for a basic accounting course it may well excel the present conventional course which overdevelops the use of book-keeping procedures which rarely apply to specific situations. More profound theory and corporate accounting problems will come later anyway.

The title, indicating a survey, may be unfortunate. A survey often means superficiality and lack of rigor. The present book does not overgeneralize. It is rather a

work of detailed procedures for a variety of accounting situations which most students probably will encounter later in their ordinary lives.

There are many questions for discussion at the end of each chapter, too many perhaps; but many will be found useful. There is adequate problem material in the appendix for student practice.

RUSSELL BOWERS  
Associate Professor

De Paul University

R. KEITH YORSTON AND E. STANLEY OWENS, *Annual Reports of Companies* (Sydney: The Law Book Co. of Australia Pty. Ltd., 1958, 219 pp., 4/10-).

If one were to examine forty or fifty financial reports of Australian companies, the striking impression probably would be the wide diversity of forms of presentation. In most cases the assets appear on the right-hand side with fixed assets at the top, but often the order is reversed and, occasionally, the American style is found. This diversity reflects Australia's determination to make progress industrially, and experimentation is the order of the day.

Under these conditions, *Annual Reports of Companies* is certainly a welcome addition to the accounting library. R. Keith Yorston, one of the co-authors, ranks high among the accounting writers of the world with a dozen or more books to his credit. With the able co-authorship of E. Stanley Owens, what amounts to a manual for guidance in report preparation has been compiled. Differing from *Trends and Techniques*, the Yorston-Owens book brings together, in well-integrated order, essays by company managers and secretaries and by financial editors on the purposes and preparation of financial reports.

A principal theme of the volume is expressed in the following quotation: "Our private enterprise economy is balanced on the knife-edge of confidence and true confidence rests on knowledge, knowledge of what goes on, knowledge of the people who make the decisions and knowledge of the people who carry them out as well as knowledge of how the system works."

The book is divided into eight sections devoted to the following topics: Development of Corporate Ownership, The Importance of the Annual Report, Illustrations from Annual Reports, The Financial Editor and the Annual Report, What the Shareholder and the Employee Think of the Annual Report, The Annual Report of a Holding Company, and Interim Reports of Stockholders. An appendix includes a summary of the criteria employed by the adjudicating panel of the Australian Institute of Management in designating recipients of awards for excellence of annual reports for the year 1956.

While *Annual Reports of Companies* was written primarily for the Australian audience it deserves a place in the American library as well. The reports of American companies make generous use of color pages, charts, and glamor items, but much of the technical matter—that is the formal financial statements themselves—is presented illogically. If a financial statement is expected to contribute to "knowledge of what goes on" all elements of the statement must be scrupulously labelled and accurately located.

Messrs. Yorston and Owens are to be congratulated for the excellence of this work. A similar book should be prepared as a guide for Americans.

ROBERT L. DIXON  
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The University of Michigan

## Economics

GEOFFREY H. MOORE, *Measuring Recessions* (New York: National Bureau of Economic Research, Inc., Occasional Paper 61, 1958, pp. 58, Price, \$1.00).

The purpose of this paper is to provide a set of measurements of past business recessions with which any current recession can be compared. Particular emphasis is placed on the possibility of judging reasonably soon after a recession has begun, whether that recession will be mild, moderate, or severe. This paper is concerned also with other matters, especially the problem of prompt identification of a cyclical upturn.

The seven significant recessions which occurred between the end of World War I and 1956 are ranked according to severity, and also are divided into two groups. The recessions which followed the cycle peaks of October 1926, July 1953, November 1948, and May 1923 are classified as relatively mild; while the recessions which followed the cycle peaks of January 1920, May 1937, and August 1929 are classified as relatively severe.

An investigation is made to determine whether there has been any significant difference in the behavior of selected statistical indicators at various stages

of the milder recessions as compared with the same stages of the more severe recessions. Nine "roughly coincident" (or slightly lagging) statistical indicators of aggregate economic activity, such as freight carloadings, industrial production, and retail sales are used; and ten "leading" indicators, such as residential construction contracts, the average workweek in manufacturing, and basic commodity prices are used. The average cyclical behavior of the two groups, as well as the cyclical behavior of each individual series is observed.

The results suggest that during the first few months of a business recession, neither the individual nor the group behavior of these statistical indicators provide a clue as to the ultimate severity of the young recession. However, as early as three or four months after the beginning of a recession, the "leading" indicators begin to behave differently in mild recessions as contrasted with more severe recessions; and the difference is substantially maintained in succeeding months of the recession. A difference in the behavior of the "roughly coincident" indicators appears about six months after a recession begins, and here also the difference is substantially

maintained during the succeeding months of the recession.

For purposes of prompt identification of a cyclical upturn it appears significant that several months before the end of a recession fewer of the individual statistical indicators continue to decline and more begin to rise. This tendency appears first among the "leading" indicators. Moore concludes tentatively that this pattern may help to identify an upturn "at about the time it occurs or shortly thereafter" (page 264).

As a result of earlier research by the staff of the National Bureau of Economic Research, the value of statistical indicators in forecasting and analyzing business conditions has been substantially increased. However, earlier research has emphasized the problem of forecasting and/or identifying the timing of business cycle turning points. *Measuring Recessions* suggests that statistical indicators are valuable also in the early appraisal of the ultimate severity of a recession.

JOHN E. KANE

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The University of Arkansas

WILLIAM A. PATON, JR., *A Study in Liquidity* (Ann Arbor, Michigan Business Studies, Volume XIV, No. 2, University of Michigan, 1958, pp. v, 176, price \$5.00)

This book brings out forcefully the effects of inflation on monetary accounts and restores some of the perspective which in recent years seems to have been lost in the general concern over more urgent problems of depreciation and inventory valuation. The study covers the twelve war and postwar years, 1940-52, during which time the price level approximately doubled. It consists primarily of an analysis, on an individual company basis, of seventy-three nonfinancial corporations, selected essentially at random and divided into two groups. The first group includes fifty-two corporations without long-term debt and the second is made up of twenty-one corporations with long-term debt. Estimated figures for all United States corporations are also presented. For each of the fifty-two corporations in the first group, the annual changes in the monetary fund, defined as short-term monetary assets minus short-term liabilities, are computed, and the various patterns of change in the amounts of and the relationships between current monetary assets and current liabilities are described and classified. More important, however, is the finding of the aggregate and average rates of purchasing power loss on the net monetary funds. The average annual loss rate for the fifty-two corporations was 5.6 per cent and the ratio of the aggregate net loss to the average net fund for the twelve-year period was 67 per cent—"There was a  $\frac{2}{3}$  erosion of purchasing power" (p. 44). Forty of the fifty-two corporations showed average loss rates of from 4.6 per cent to 5.9 per cent a year. Only two companies showed net purchasing power gains for the period on their monetary positions.

The aggregate purchasing power loss on the net monetary funds of "all" corporations, computed in the same way and for the same period, was over \$12.5 billion (December 1952 dollars), or more than a billion dollars a year. In twelve years, the purchasing power

loss amounted to 60 per cent of the average net monetary fund. A loss of this magnitude is certainly not negligible. Since it could have been avoided, it must be regarded as part of the price which American corporations paid more or less deliberately for liquidity during the period. The author does not say that this price was necessarily too high—liquidity can be important under certain conditions. However, he does say, and he assembles ample evidence to support his point, that the price was too high to have been paid, as it apparently was, without a careful counting of the cost. "It appears that corporate management generally has given insufficient attention to the impact of inflation on the monetary fund" (p. 99). He suggests that one method of focusing attention on monetary position and inviting a more systematic consideration of its implications would be to abandon the customary current-noncurrent classification of assets in favor of one which segregates the monetary and nonmonetary components of financial position.

Since this is primarily a study of liquidity, only one brief chapter is devoted to long-term debt. The figures for the twenty-one corporations in the second group are analyzed to determine the purchasing power "gains" on long-term debt during the 1940-52 period. The chapter and the accompanying statistics constitute a good introduction to the problem, but the treatment is too brief to cover fully a number of complex questions relating to the nature of purchasing power gains and losses on debt and the criteria for determining when they are realized. Also, the classification of ordinary preferred stock as a nonmonetary equity can be questioned. Such stocks are nonmonetary in name, but are they not monetary in fact?

In summary, *A Study in Liquidity* contains (1) a concise explanation of the general effects of inflation on the major financial statements, (2) a careful analysis of the impact of inflation on current monetary funds, and (3) a brief presentation and analysis of the problems raised by long-term debt during periods of price level change. Anyone charged with responsibility for the monetary position of a business enterprise will find useful information and suggestions in this study. Although it relates to a period which is past, it becomes more and more timely as governmental deficits grow larger and larger.

RALPH C. JONES

Professor of Economics

Yale University

PAUL STUDENSKI—*The Income of Nations* (New York: New York University Press, 1958, pp. xxii, 534, 7 $\frac{1}{2}$ " $\times$ 10", \$25.00).

Professor Studenski's book is a fundamental work of almost encyclopedic character, as far as national income analysis is concerned; regrettably, some border areas, as for instance the "input-output" analysis and "flow of funds" approach, are not covered extensively enough.

This work is good evidence that the historic approach is one way to come to grips with national income statistics and the theory behind it. The book conveys a profound understanding of the "why" and "how" of

many concepts and practices of this branch of economics and fills a gap in the history of economic thought as well as in the history of economic life. Another important facet of the work, one of particular merit, is its truly international treatment of the subject. With painstaking effort a great wealth of details, historic as well as current, has been collected from a large number of countries, and has been arranged in a well organized book which is written not without creative imagination.

By calling this work *the income of nations* the author deliberately puts his view from the very outset in opposition to that of Adam Smith who, as Studenski points out, "erroneously concerned himself with wealth primarily in terms of a 'stock of goods' seriously neglecting its aspect as a 'flow' of utilities, i.e. of national income." Out of this criticism, repeatedly encountered in the first part (history), grows the conviction that as far as national income analysis is concerned Adam Smith turned the wheel of progress backwards rather than forward; a view which is in accord with Schumpeter's opus posthumous. Following the latter, the author shows that the true precursors of the modern national income approach of the Western hemisphere are Sir William Petty and Pierre Boisguillebert. Studenski calls the income concept on which this approach is based the *comprehensive production concept* in contrast to Smith's *restricted material production concept* which, ironically enough, he identifies almost with the income concept nowadays used by the countries of the Soviet bloc. This part one, consisting of about 150 pages, leads from reflections on the conceptual development in different schools to the actual estimates made during the past three centuries. It offers a variegated historical picture, richly endowed and interwoven with statistics<sup>1</sup> of the past, and yields many valuable insights. This part is a true jackpot for the historian who searches for details on national income and past estimations in various countries.

Part two (almost as comprehensive as part one) is devoted to the theory and methodology of national income accounting. In a very thorough analysis the individual tools as well as the various alternatives of the whole mechanism are presented and illuminated from different sides, pivoting on the practices in the United States and the United Kingdom. Here, where history rather than theory comes to the fore, the historic approach still permeates the discussion and reveals the forces shaping many a complex part of this apparatus of measurement. While the first and third parts of the book have much new information to offer, even to the expert, the second part will be especially appreciated by the student, the accountant, the general economist, etc., who may wish to acquire sound knowledge on national income accounting and its problems. For the expert this part constitutes good reference material for occasional check ups, especially as regards the methodology abroad. All three parts are to a certain degree overlapping and slightly repetitive which is due to the structure of the book and need not be considered a shortcoming. On the contrary, those less familiar with the subject may regard it as a pedagogic advantage.

To Leontieff's input-output approach the author devotes a separate section of only slightly more than one

page. Neither the matrix-algebraic and economic-mathematical problems connected with this analysis, nor the recent attempts abroad are mentioned. And Copeland's and the Federal Reserve Board's flow of funds analysis, although shortly mentioned, has within the scope of this book, not been found worthy of any special treatment. Hence Studenski seems to represent the counterweight to economists like Aukrust, Copeland, Frisch, etc. who see the main function of social accounting in the reproduction of the actual circulation and production process, without granting a unique or exceptional position to the measurement of national income.

The third part, comprising over 200 pages, discusses the income estimates made in the following selected countries: Canada, Ireland, the Netherlands, Sweden, Soviet Russia (to which, understandably enough, relatively more space is devoted), Germany, France, Yugoslavia, Turkey, India, Brazil, British West Indies, and Malaya. These countries form a well balanced cross section of large and small, industrialized and underdeveloped, capitalistic and socialistic economic entities. The twelve chapters on these countries "all open with a brief history of the country's estimates; outline the concepts underlying them; present their general methodological approach; give for each item of the national income the statistical sources and methods employed in estimating it; and end with the presentation of the main statistical results of the estimates." Furthermore the *general development* is outlined for the United States and Great Britain (two countries for which the income statistics are fairly well discussed in part two), for Australia, New Zealand and the Union of South Africa, for eighteen European countries, Latin America and the Caribbean, the near, middle and far East, as well as Africa, offering a unique and pretty complete survey. National income studies carried out for limited regions as for instance the city of Hong Kong, for Barbados, or Puerto Rico, are taken into consideration while those made for the free city area of Trieste and for the city of Amsterdam remain unmentioned. The bibliography is up to date (1957), comprehensive, but not quite complete, especially not with regard to significant articles on the theory of social accounting. One also misses the listing of books like J. Powelson's *Economic Accounting* and J. Y. Calvez' *Revenu National en U.R.S.S.* (Paris).<sup>2</sup> (There exists an index of authors and one of countries but none of subjects in general.)

The statistical appendix (4 pages) presents national income aggregates of eighty-seven countries at the mid-century. In this connection it must be stressed that the book does not intend to be an international statistical survey of national accounts (which could erroneously be inferred from its title) like the *Yearbook of National Statistics* of the United Nations. Neither does it aim in the direction of Colin Clark's *Condition of Economic Progress* (though part two of the book under review contains a comparison of the per capita incomes of sixty-four countries), nor does it tend toward fundamental research as Ohlsson's *On National Accounting* might be considered to do. It is a book without competition, and that may be one reason why it is priced so exorbitant-

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ly high. This is to be regretted because many scholars who would like to own a standard work on a subject of constantly increasing importance as this one, will not be able to afford the purchase.

R. MATTESSICH  
Associate Professor

University of California

<sup>1</sup> Table 10-1, p. 147, contains a printing error: third numerical row (Russia), last column, should be: 113, instead of: 13.

<sup>2</sup> It also should be mentioned that citations and translations of some foreign titles reveal a certain sloppiness in treatment: e.g. "Konjunktur Institut" (which in German should be spelled as one word) instead of "Oesterreichisches Institut fuer Konjunkturforschung" (p. 473). In the case of Swedish the name "Konjunkturinstitutet" is repeatedly misspelled as "Konjunkturinstitut" (pp. 334, 335, 344, 348, etc.). Also Prof. G. Grossman of the University of California has indicated to me, some of the translations from the Russian are inaccurate, for instance the society that he frequently mentions (e.g. p. 366) is not the "voluntary economic Society" but the "free (or liberal) economic society."

### Finance

BENJAMIN H. BECKHART (Ed.), *Business Loans of American Commercial Banks* (New York: The Ronald Press Company, 1959, pp. vi, 453, Price \$7.50).

Although numerous books are available on the general subject of banking, most of them deal with monetary and credit policy. The practical aspects of bank lending have generally been neglected, except by a few publications originating in the several educational programs within the banking profession. None of these was a comprehensive treatment of this broad subject. This book, edited by Professor Beckhart, will help to fill an obvious need by providing a scholarly treatment of selected aspects of bank lending problems.

The only major criticism of this book is the one usually applicable to a book written by more than a few authors. Although each of the fifteen contributors is probably an expert in his particular area, quality and comprehensiveness do vary among the several segments of the book. In addition, there is a noticeable lack of "tie-in" between sections, as well as considerable duplication.

The book is divided into three parts. Part I, Background, covers such subjects as why business firms borrow from banks, organization for lending activity, evaluation of credit risks, and risk protection. Part II, Types of Business Loans, treats the seasonal, working capital, financial intermediary, and term loans. Also in this section is a chapter on the slow loan. It is difficult to see why this latter chapter belongs in this section. Part III, The Dynamics of Business Loans, has chapters on competition for loans, business loan statistics, interest rates, credit availability, loan policy, and economic growth and stability.

The overlap referred to above takes several forms. Since both Part I and Part III cover background and general aspects of loan policy, there is no clear-cut distinction between the objectives of the two sections; consequently, the several authors dealing with these subjects tend to duplicate coverage. All of the material on loan statistics (Chapter 1 and Chapter 12) probably should have been combined in one place. The overlap between competitive factors in lending and credit availability is obvious. In addition, there is considerable duplication between the chapters in Part II and the more general subject matter of Parts I and III. The authors that present materials on four types of business loans, in order to make their chapters complete, also

develop background material, as it applies to their subject, on loan policy, credit worthiness, and related matters. This treatment also results in some overlap among the chapters in Part II.

Because of the difficulties associated with a multiple-author book, one might find it somewhat unsatisfactory to use this book as text material. However, offsetting this disadvantage is the value obtained by having authorities in specific areas treat the several topics. As reference material, either for college students or for educational programs for persons already in banking, this work will be very useful. In this type of use, the lack of integration in the book will not present the same problems as it would for a textbook.

There are several specific comments that can be made about the coverage of material. The book treats business loans of commercial banks, and a majority of the statistics and illustrations is in terms of averages of all banks or broad groups of banks. It would have been useful to have more illustrations of what representative individual banks do. For example, in the discussion of interest rates, spreads within representative banks by size of loan and type of loan would have been desirable. So much is lost in averages.

The attempt to discuss seasonal loans, the working capital loan, and the term loan as separate topics was not satisfactory. Except for whatever definition a specific author may wish to give each of these types, there does not appear to be sufficient difference among these in the real determinants of loan policy to warrant elaborate separate treatment. The term loan is often a working capital loan; so is the seasonal loan. A substantial part of the duplication could have been avoided if a better classification among types of loans had been chosen.

In terms of their contribution to banking literature, the chapters on financing intermediaries, term loans, risk protection, and loan policy appear to be the most valuable parts of the book.

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Professor of Finance

University of Texas

THE COMMITTEE ON PUBLIC FINANCE (New York: Pitman Publishing Corporation, 1959, pp. xviii, 798, Price, \$6.00)

"The Committee on Public Finance," a collaborative writing group consisting of sixty-six professors teaching

at colleges and universities, have produced the latest in the long series of textbooks in public finance. Pooling their scholarship and teaching experience they have sought to meet the wants and needs of public finance instructors for a broad and comprehensive text "implicating the larger problems of freedom, justice, and the nature of individual and social well-being."

The Preface describes the manner in which the Committee members organized to work on the text. The work process outlined is complicated and unique, and I am sure the members of the Committee can now say in reference to the book, "They said it couldn't be done." The result demonstrates that such an organization can produce, although the book does display both the strength and weaknesses associated with group effort.

The volume consists of six parts. An introductory unit of 76 pages is intended, among other things, to "formulate a basis for determining which tasks should be undertaken by government and which should be left to the private economy." It goes further and "formulates a basis for determining which level of government is best equipped to handle the functions previously defined as 'governmental' in character." The next 500 pages are used to describe and analyze government spending, taxing, and borrowing activities. Attention is given to administration of these activities, "how they are likely to develop in the future," and "the economic effects of these activities and the contributions they make toward the well-being of society." The final 200 pages are devoted to fiscal administration and fiscal policy. There are 31 chapters, each of which ends with a list of 15 to 20 general questions.

The strong points of the book are its scope and organization which seek to fit the various phases of public finance into a single and unified process. The Committee deserves congratulations for its efforts to show the process of financing governments as one which involves economics, accounting, political science, administration, law, history, and sociology. The new text should help students to appreciate the complex and growing place of public finance in modern society, and instill a greater concern for the orderly administration of the public sector of the economy. It can make no greater contribution.

The weaknesses of the book include a lack of coher-

ence and an unevenness in the quality of writing and in subject matter presentations. The volume has many of the characteristics of a book of selected readings. There are some repetitions and some excursions without clear indications of the relevancy of the material. A greater degree of uniformity is needed in methods and techniques of presenting current data, in treating historical material, and even in the use of terms. Perhaps the basic problem is to find ways of preserving individual contributions and, at the same time, obtaining a satisfactory degree of unity to enable students and readers to grasp the significance of the materials presented. It may be that divergent or conflicting views should be set out side by side with suitable explanations.

The Committee has set laudable but difficult goals to be achieved in its introduction and fiscal administration sections. To say that the present chapters fail to meet these goals is not to disparage the efforts made. The expenditures chapters need some reorientation. In terms of space allocation, more than twice as much attention is given to international expenditures as to education. The quality of the chapters on Taxes and Revenues may be explained in part by the greater abundance of studies and writings in this phase of public finance. Throughout the volume there are excellent materials not usually found in texts on public finance.

There are a number of major topics which should be more fully developed in a comprehensive text. Among these are: financing and administering government services in the rapidly growing metropolitan areas; the economic and governmental significance of defense expenditures; administering complex income and property tax laws in the face of growing revenue needs and mounting public disapproval; and intergovernmental conflicts which often overshadow joint federal-state-local responsibilities.

The text will serve a useful purpose and its adoption in a number of institutions seems assured. Some conspicuous omissions should be removed when the time for revising is at hand. And it will be extremely interesting to see if the Committee will collaborate again.

HERSHAL L. MACON  
Economist

Tennessee Valley Authority

### General

PAUL J. STRAYER, *Fiscal Policy and Politics* (New York: Harper and Brothers, 1958, pp. x, 295, \$4.00)

*Fiscal Policy and Politics* is written as much for the lay reader as for the professional social scientist. It has valuable advice for both. The author admonishes the average citizen with the importance of taking an active interest and concern in the workings of government and economics. To the social scientists he emphasizes the importance of "divesting themselves of the cult of pure objectivity." Having divested themselves it is then incumbent upon the social scientists to formulate "a more articulate philosophy of the role of government in the social, political, and economic structure of the United

States."

Professor Strayer's main thesis, which runs throughout the book, is that governments of the present day magnitude cannot be made neutral. They have the ability to improve or to do irreparable harm to the distribution of income and the productivity and growth of the economy. Whether the American government does good or evil is first and foremost, according to Strayer, in the hands of the President of the United States. To be effective, however, the President must have "an articulate philosophy" and be able to express and defend it at all times. According to Strayer, neither of the last two Presidents has had the inclination or the ability to come forward with such a philosophy. What then do

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we do if no such statesman as the type suggested by Strayer comes to the forefront? In the case of this eventuality the author opines that the job of bringing before the American public the "issues of government" and the formulating of a "reasonable set of objectives" falls to lesser men and women. *Fiscal Policy and Politics* is an attempt, by the author's own admission, to assist the lesser men and women.

Surrounding the main thesis—the inability of the American government to be made neutral—Strayer develops two major points. First, because of the increased demands on the part of the American people for services that only government can supply, the overwhelming importance of government finance will not be reversed; and, second, that the government because of the pressures of power blocs, special-interest groups, and election-conscious politicians, finds it difficult to use its power wisely. The latter danger can only be prevented or overcome by the Presidential or lesser-men leadership and understanding cited above.

Woven in very cogently and deftly with the major theses, are the knotty problems of fiscal, monetary, tax, and stabilization policies. Strayer correctly emphasizes the importance of the complementary nature of monetary and fiscal policy. His writing on taxation (Chapters XI-XIII) indicates a clear and concise understanding of the vexing problems in this area, particularly the relationships between the three levels of government. Moreover, accountants should find Strayer's treatment of such tax problems as "averaging," capital gains, depletion allowances, accelerated depreciation, and "double taxation" quite stimulating.

Strayer has fashioned a fine monograph. He has brought together much material from several areas of the social sciences and welded them into a cohesive whole. This study, though not geared to the traditional textbook approach, should be on the reading list of all social scientists and made an integral part of all courses in public finance and American government.

BERNARD F. SLIGER

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Louisiana State University

HERBERT F. TAGGART, *Cost Justification* (Ann Arbor: Bureau of Business Research, School of Business Administration, University of Michigan, 1959, pp. xvi, 588, \$12.50).

Under the provisions of the Robinson-Patman Act it is possible for a seller charged with illegal price discrimination to defend such a charge on the grounds that his differentials in price "make only due allowance for differences in the cost of manufacture, sale, or delivery resulting from the differing methods or quantities in which such commodities are to such purchasers sold or delivered." The purpose of Professor Taggart's book "is to array all the recorded instances in which respondents to Federal Trade Commission complaints or defendants in treble damage suits have attempted to defend their pricing practices by presenting information about their costs."

Probably no one is more qualified to write a book on this subject than Professor Taggart. His long experience

in accounting and his close contact and experience with the Robinson-Patman Act and the Federal Trade Commission, including the Chairmanship of the Advisory Committee on Cost Justification, give him a background which few people can claim. Professor Taggart's qualifications make the book particularly important.

The book consists of 21 chapters. Each of the first 15 chapters discusses a case in which cost justification was presented on a "full-dress basis." Chapter 16 is made up of 7 cases, which are referred to as "Minor Commission Cases," where cost justification played a part or was discussed. Chapters 17 and 18 discuss Treble Damage Suits, in which cost justification has been important. In Chapter 19, Taggart discusses the question (using cases) of Must a Buyer Know the Seller's Costs?

Throughout the first 19 chapters of the book Professor Taggart has built his presentation and discussion around the actual cases. He has examined in detail the cost issues of each case as these issues have affected the final decision. He draws comparisons (both differences and similarities) between cases on many important points and this does much to tie the subject together. This part of the book is a fine job of digesting and analyzing the voluminous and complex public record of cases. An example of the effort involved in this digesting procedure is given in the Goodyear Tire and Rubber Company Case, Chapter 1. Taggart points out that about  $\frac{1}{3}$  of the public record deals with cost problems—some 5,000 pages. His chapter is 32 pages long.

In the last two chapters, Taggart discusses "The Rules of the Game" and "Cost Justification: Where Does It Stand." Had chapters like this been interspersed throughout the book, the case-type discussion would have been easier to follow and easier to understand. It is difficult to grasp the significance of some of the cases because of the mass of detail presented and the complexity of the problem. A text-like discussion would have been a real aid. Although Professor Taggart's opinions and evaluations do show through occasionally, more of this kind of summary and analysis would have been helpful.

As for the chapter on "The Rules of the Game," Taggart finally does list and discuss eight generally accepted principles and standards which he has gleaned from some 500 pages of case discussion. To a generally interested reader, these few pages may well be the most valuable part of the book.

In the final chapter, Professor Taggart concludes that the cost defense, although complex and uncertain, is still the most practical and available. He urges that the important conclusion from studying the cost-defense cases is that the best time to prepare to offer the cost defense is before the complaint is issued. He does not advocate that Robinson-Patman accounting should be built into the cost system, but he urges that cost studies be made when discount policies are established so that the firm's position under the Robinson-Patman Act can be assessed properly. Such studies, according to Taggart, may be used by management to make its decisions more rational. He does not reconcile in detail this comment with an earlier conclusion that differential cost analysis is unacceptable to the Commission and

also that the distinction between fixed and variable cost is unimportant in cost-justification studies.

Taggart says that the book is *not* written for the person who thinks the Robinson-Patman Act will go away if he ignores it long enough. It is, instead, for the man who adopts the assumption that the Act is here to stay. Most people probably fall in the latter group. For most accountants, sales managers, and teachers, the book is probably too detailed. Lawyers will probably go to the original case although this book may be of real help to them on the cost-justification issue. It is unfortunate that Professor Taggart did not organize the book around the eight general principles and standards, discussing these in detail and illustrating them with case references and discussions. This approach would have been more useful to accountants, sales managers, and teachers of Cost Accounting, Government Regulation of Business, or Marketing where cost justification is only one of many important problems.

ROBERT K. JAEDICKE

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Harvard University

WYATT & WYATT, *Business Law* (New York: McGraw-Hill, 1958, pp. xxi, 866, Price \$7.50).

John W. Wyatt and Madie B. Wyatt, a husband and wife team, have written a very teachable text for the standard course in business law. Both authors have practiced before the Florida bar and the senior member of the firm (at least his name appears first on the title page), is Professor of Business Law at the University of Florida.

The Wyatt text encompasses more than the usual number of topics covered by older books in the field. For example, it contains an interesting and very valuable treatment of the nature of torts and crimes. This appears among the introductory chapters, all of which achieve a refreshing lucidity in sketching the back-

ground material on our law and the judicial system. Such introductory chapters seem to plague most authors as they attempt to generalize broadly enough to include every state in the union. The entire book reflects painstaking craftsmanship on the part of the Wyatts, with a style both crisp and economical in word usage. Each chapter of the text is followed immediately by well chosen cases and problems.

Moreover, the cases are cited conveniently in the textual portion of the chapter both as to page and title without using footnotes. Another commendable feature is the complete table of cases which follows the table of contents in the front of the book.

Teachers who prefer to use the case method will find the amount of such material inadequate for their needs. However, the teacher desiring to give his students a well balanced presentation of the broad field of business law within the six or eight semester hours normally available to him should welcome the Wyatt work. Furthermore, it should prove valuable for specialized courses in preparation for C.P.A., C.L.U., and C.P.C.U. examinations.

Most teachers of business law will probably agree that the section dealing with negotiable instruments involves the greatest frustration, both for the student and the teacher as well. With this difficulty in mind, the Wyatts have summoned their finest talent in developing the law in this very vital area. The Uniform Negotiable Instruments Act does appear in the appendix. But, in the text itself, the authors avoid its technical language and have converted it into quite readable prose, a pleasant accomplishment for this field of the law. Moreover, they have used visual aids quite helpfully by way of illustrating the kinds of negotiable instruments and types of indorsements.

JAMES A. HART

Dean, College of Commerce

De Paul University

## Management

CREDIT RESEARCH FOUNDATION, *Credit Management Handbook* (Homewood, Illinois: Richard D. Irwin, Inc., 1958, pp. xxiv, 776, \$12.00).

The National Association of Credit Men had this comprehensive handbook prepared and edited by the Credit Research Foundation. The contributors were one hundred eight persons from the broad field of credit, mainly individuals connected with credit departments, credit agencies, and education. A good editing process, however, gives the presentation consistency. The coverage of business or mercantile or commercial credit is complete within the limits which the presentation aims to include. By intent, neither consumer credit (mainly charge accounts and instalment credit to individuals) nor its wholesale handling (sales financing and floor planning) were considered to be within the scope of the publication.

The background of modern credit, the philosophy underlying credit, and both general and credit management objectives are covered in four introductory chap-

ters. There is good discussion of the desirable location of the credit department in company organization as well as a good discussion of the proper responsibilities of a credit department.

The internal organization of the credit department, manning the credit department, and training personnel for credit management are presented in Chapters 5-7. This subject is later carried through (Chapters 16-19) to cover in detail department systems and procedures, appraisal of credit operations, the credit manual, and departmental reports. This series of chapters starts with principles, indicates sound policies, describes techniques, and then presents detailed examples. Credit department systems and the credit manual have specific illustrations which could be converted easily to fit many individual firms. This thoroughness of organizing and presenting material is typical of the handbook.

The section of four chapters on analyzing the credit risk are excellent. These chapters present both ordinary or normal analysis techniques and certain special procedures for unusual problems. A detailed guide for

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classifying assets and liabilities is very helpful. This analysis section appears to be one of the strong sections of the book, particularly since it emphasizes the hows and whys of actual credit decision making with many examples.

Direct credit investigation is emphasized considerably more than securing information through credit agencies. Since most texts in the field cover credit agencies strongly, this contrast may be useful although the discussion of the normal credit agencies is not too strong. Collections, distressed debtors, credit law, the function of the credit man as an adviser to debtors, terms of sale, credit correspondence, financing accounts receivable, credit insurance, and foreign credit are adequately handled. Foreign credit is covered less thoroughly than domestic credit, yet the material seems adequate. In these special areas, the handling is competent and up to date. Financing accounts receivable, for example, gives the best discussion of factoring which has appeared in any major credit book. The discussion includes modern developments in factoring, costs, and when factoring may be advantageous.

For an overall evaluation of the handbook, it can be said that mercantile or commercial credit is thoroughly covered, the treatment is well organized, and specific information is easily located although a more detailed index would strengthen its utility. As a college or school reference the book will have great value. In terms of text use, the handbook deserves consideration when the credit course is limited to mercantile credit. In spite of having all of the practical detail which is the trade-mark of a good handbook, this presentation is readable and ties in theory with practice in a superior manner. This handbook deserves a prominent place on the bookshelf of the businessman in credit or dealing with credit, and will be particularly useful in training potential credit executives within the individual firm.

ALBERT HARING  
Professor of Marketing

*School of Business, Indiana University*

DALTON E. McFARLAND, *Management Principles and Practices* (New York: The Macmillan Company, 1958, pp. x, 612, Price \$6.95).

*Management Principles and Practices* is another text for the beginning course in industrial management. The book sets out to "describe the elements of the managerial process which are fundamentally important." The author believes "management principles are *discovered*, not invented" because "they have existed all along but we have not always been aware of them." Therefore, the aim of the student of management should be to learn certain basic truths and to improve his ability to apply this knowledge to the problematic situations he encounters.

Because the author believes the principles of management are valid in any cultural environment and at all times, he attempts to present and justify one point of view in each area of management theory. This approach accounts both for much of the strength and possible weakness of the book. The danger of leaving the beginning student confused by introducing him to contro-

versial approaches to many problem areas is avoided. On the other hand, the individual instructor may not agree with the position taken by the author on a number of points. In this case, he may desire to use some other textbook.

There are twenty-seven chapters divided into four parts. Part I, The Field of Management, consists of three chapters that provide a definition of management, a summary of Taylor's contributions to management theory, and descriptions of the functions of management. Management is defined as the process of "guiding, directing, supervising, leading, deciding, planning, and creating."

Approximately one-half of the book is included in Part II, Principles and Fundamentals of Management. The functions of management are discussed in four chapters on planning and decision-making, seven chapters on organization and authority, and two chapters on controls and organizational tactics. Managers are responsible for decisions involving the selection of objectives, policies, and procedures. And "profits provide a basis for judging the effectiveness of managerial effort."

The author expounds only the status concept of authority. Management organization consists of a high status leader at the top who delegates authority to departmental managers of decreasing status at lower levels in the organization. "The ultimate source of the authority inherent in organization structure stems from the top leader who is the active representative of the ownership."

The feature that distinguishes this text from others in the field is the inclusion of a section on Human Relations and Personnel Management. The problems of human relations, motivation, and industrial relations are described. A brief survey of the functions of employee selection, placement, remuneration, promotion, and safety follows a statement of the place of the personnel department in the organization. These chapters are reminiscent of personnel administration textbooks. A more appropriate approach for a text on management might have been to describe means of maintaining effective human relations in the process of carrying out the management functions of organizing, planning, and controlling.

Part IV, Operating Management, includes five chapters on as many subjects that were, in the author's words, "arbitrarily chosen." The choice of aspects included in each chapter was equally arbitrary, rather than definitive. Subjects covered include the functions of various departments, production, leadership, industrial engineering, and wage and salary administration.

Following the text there are thirteen cases that tend to emphasize problems in human relations.

Taken as a whole, this book is as noteworthy for what it neglects to say as for what it manages to say. Its impact could have been increased by the inclusion of original views or by more penetrating discussions of some of the topics covered.

T. R. BRANNEN  
Dean,  
School of Business Administration

*The University of Kansas City*

WOODBURNE, LLOYD S., *Principles of College and University Administration* (Stanford: Stanford University Press, 1958, pp. 197, Price \$5.00).

This is a compact, readable, and useful volume on many phases of its large subject, by an author of substantial experience in what he is discussing.

In Chapter 1, University Organization, he correctly notes that "internal operation in a college or university" is "different from that of state departments, business corporations, or foundations." Then he properly warns against "board members" (and he might well have included accountants and management specialists) who "try to introduce unaltered business methods in a process which does not work for profit."

The "central core" of the organization is the "educational teaching function." But "without proper financial support any educational program will be pale and anemic." Hence, good business and financial management, and good legislative and/or alumni and public relations become significant parts of the scheme to make that program work.

Chapter 2 deals with financial and physical management. Details are omitted in recognition of authoritative treatment in "College and University Business Administration" (American Council on Education, Washington, 1952). This work holds to the philosophy that business and finance exist to serve, rather than control or direct, the educational processes. Yet the author seems to blame business officers for two flaws in the application of this philosophy: (1) failure to counsel adequately with educational personnel on plans and equipping of new buildings; (2) detailed budgetary control by a central budget officer. His illustrations, however, are those of neglect or interference by outside architects on the one hand, and municipal or state budget officers on the other. Institutional business officers rarely fail on either of these counts.

In Chapter 3, the author deals with obligations and relationships of heads of colleges and schools within a university. They should be a "party to the formulation of decision" on institution-wide policies. They should be able to look both at the general problems of the institution, and the specific problems of their divisions.

A statement that "when non-academic people try to assume operating responsibility they always cause trouble both for themselves and for others" is difficult to understand. Who else would operate the heating plant, or handle the cleaning and safety of the buildings, or do a host of business services which non-academic people perform? Policies may be educationally determined, and of course budget limitations set by top administrative authorities; but "operating responsibility" can only rest in competent non-academic personnel.

Faculty Personnel Administration is dealt with effectively in Chapters 4 and 5. Recruitment and ap-

pointment procedures, salary scales, promotions, retirement provisions, and sabbatical leaves are discussed here. One significant observation is that "the most important function which faculty perform is teaching." In these days of extensive research and consulting opportunities, to mention only two which crowd in on teaching time, this is a principle difficult to maintain.

The most important elements in the salary picture, the author believes, are (a) minimum salary for each rank, steadfastly adhered to, and (b) salary increases by "judicious use of merit" which can meet both the pressure of inflation and the needs for individual recognition "without the unfortunate consequences of uniform treatment."

Chapter 6 deals with Curriculum and Teaching, including student counseling. "Teaching load" is something much more than time in class. "In general, the better and stronger the college or university the lower is its teaching load." Thus there is "more time for class preparation and research." But the author cautions, "Whether this time is always used for these purposes is another matter."

An excellent Chapter is No. 7 on Departmental Administration. At this point "directions emanate and flow down to the actual functioning level." Personnel problems, research, curricular problems also center here.

Chapter 8 is devoted to non-academic personnel. In it the author pays tribute to the "importance of a good non-academic program" to the "effectiveness of any teaching institution."

Chapter 9 is most interesting: "Educational Priorities and Operational Research." Basically an "overall educational plan" is needed. Its implementation requires decisions involving "clear-cut educational preference or priority." These should be aided by internal research studies.

"Research Work and the Graduate School" are dealt with in Chapter 10; the Dean of Student's Office in Chapter 11, and Summer Session and Adult Education in Chapter 12. In Chapter 11, the necessity of a shared responsibility for student residence halls between the dean of students and the business officer is appropriately recognized.

The author was able to identify only a small number of works dealing specifically with this field. Evidently the people engaged in higher education administration have been so busy doing their jobs they have had little time for telling how they do them. Here is a book, however, which intelligently points up many of the problems, suggests ways of approaching them constructively, and is good reading for executive, academic, and business officers and others who may be looking forward to such assignments.

LLOYD MOREY  
President and Professor of  
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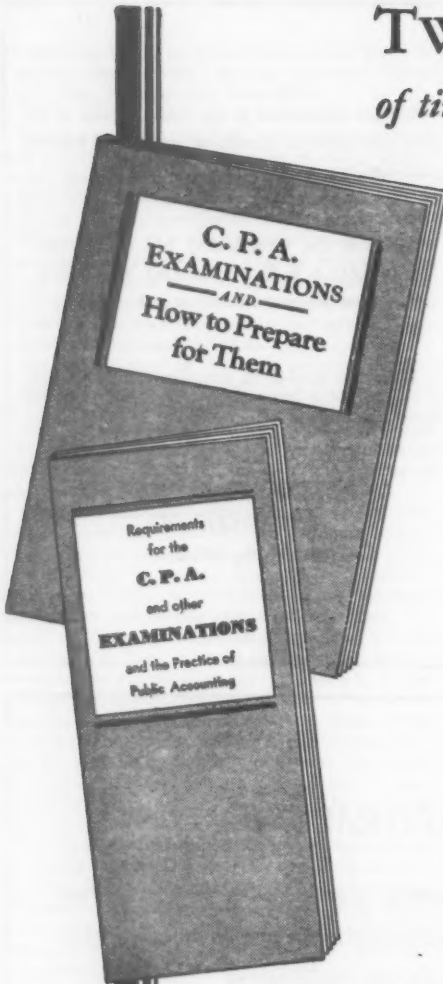
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